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ARCHITECT & CONSTRUCTOR

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EVERY FRIDAY 9D.

THE BUILDER LIMITED

CATHERINE STREET AND TAVISTOCK STREET, ALDWYCH, LONDON, W.C.

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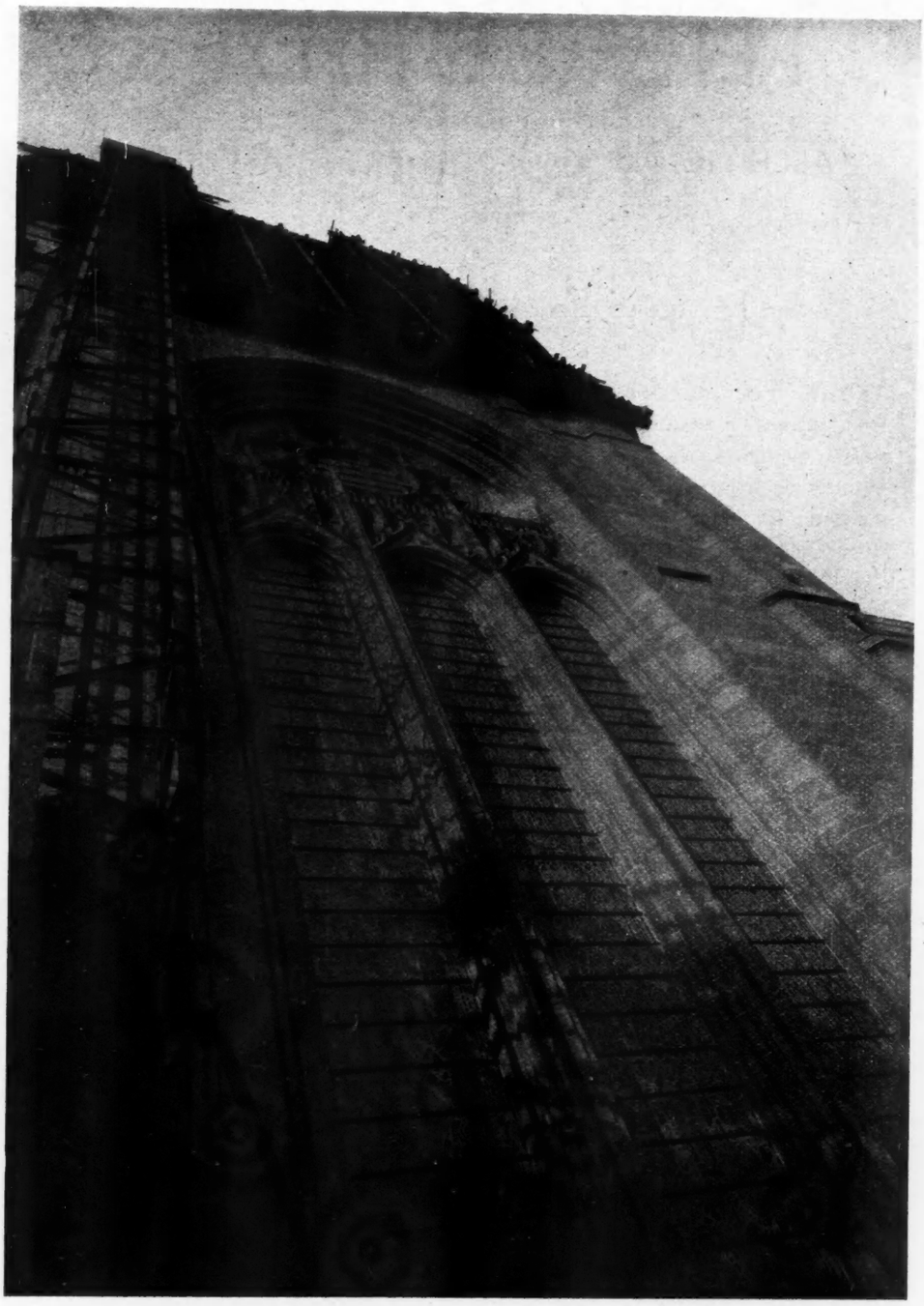


LOOKING UP THE TOWER, LIVERPOOL CATHEDRAL.

Taken early in September, this photograph gives a good impression of the progress made on the tower of Sir Giles Scott's Cathedral. During the past three months the walls have risen approximately 6½ ft. to 279 ft. above datum. There are now 202 men and apprentices working on the Cathedral as against 266 at the beginning of June. In spite of this and the Government control of cement which, according to the current issue of the Liverpool Cathedral Committee's quarterly bulletin, is severely restricting the supply urgently needed for concreting, the intention of the Committee is to go steadily ahead on the work of building as far as human and material sources permit.

NOTES AND NEWS

Town and Country Planning During the War.

THE Minister of Health (Mr. Walter Elliot) has addressed a circular to local authorities on their work under the Town and Country Planning Act, 1932, during the war, in the course of which he recommends that planning authorities, whilst giving due regard to exceptional considerations arising from war-time conditions, should continue to deal with applications for development in accordance with sound planning principles. The Minister will continue to deal, as before, with any appeals against decisions of the local authorities which may be submitted to him.

The Minister suggests that local authorities should bear in mind that they must retain some organisation to deal with interim development, and other local planning questions which may arise during the war, and that it is desirable that, if possible, they should maintain a nucleus of staff which would preserve continuity and secure that full planning activity may be resumed without delay so soon as circumstances permit.

As regards planning schemes which have already been made and are at present before the Minister for his approval, the Minister has decided that local inquiries must be deferred for the time being. He hopes, however, to continue the consideration of a number of schemes in respect of which a local inquiry has already been held with a view to the approval of the scheme in due course, if the local authority consider, in the light of the local circumstances, that it is desirable to proceed.

The Housing Centre: Present Activities.

THE Housing Centre is carrying on work at its former offices, 13, Suffolk-street, London, S.W.1. Its present activities include the following: (1) The preparation of a series of information sheets dealing in concise form with the multitude of new Acts, Circulars, Orders and Regulations relating to housing, rents, leases, etc., in war time; (2) the offices remain open to all members of the public interested in housing, and architects will be especially welcome at Tuesday lunches (visitors are requested to bring their own "picnic" lunch, though tea is served), which are held every week at 1 p.m. At each of these lunches a talk dealing with some aspect of war as it affects the community in relation to housing, evacuation, etc., is given, followed by an open discussion; (3) a section of the Evacuation Camps Exhibition, shown earlier this year, is now on view on the ground floor.

The Housing Centre has issued five pamphlets summarising and explaining the provisions of the more important Acts or Orders affecting housing passed since the outbreak of the war. These are: (1) Housing Acts: Postponement of Work; (2) Rent and Mortgage Interest Restrictions Act, 1939; (3) Housing (Emergency Powers) Act, 1939; (4) Courts (Emergency Powers) Act, 1939; (5) Landlord and Tenant (War Damage) Act, 1939. Price 3d. each (3½d. post free), these pamphlets are obtainable from 13, Suffolk-street, S.W.1.

An Appointment: Hull School of Architecture.

MR. C. MAX. LOCK, A.R.I.B.A., fourth-year unit master at the Architectural Association School of Architecture, London, has been appointed head of the School of Architecture of the Hull College of Arts and Crafts.

The Technical College, Blackpool: Appointment to Building Trades Department.

MR. H. T. JACKSON, F.R.I.B.A., A.M.I.Struct.E., has been appointed head of the building trades department at the Technical College, Blackpool.

Borough of Stepney: Post of Borough Engineer Vacant.

THE Metropolitan Borough of Stepney invite applications from persons between the ages of 35 and 50 for the appointment of Borough Engineer and Surveyor of the Metropolitan Borough of Stepney. Applicants must be Members or Associate Members of the Institution of Civil Engineers (by examination) or of the Institution of Municipal and County Engineers (by examination). The inclusive salary will be at the rate of £1,000 per annum, increasing by annual increments of £50 to a maximum salary of £1,250 per annum. Applications must be sent by October 30 to Mr. W. L. McCarty, Town Clerk, Municipal Offices, Raine-street, Wapping-lane, London, E.1.

King Charles's Statue To be Protected.

THE Office of Works has informed the Royal Stuart Society that it is intended to protect the statue of King Charles I at Charing Cross against possible damage from air raids. The considerable expense involved will be borne on public funds, but the First Commissioner of Works has expressed appreciation of the desire of certain members of the Royal Stuart Society to make a contribution.

Miners' Welfare Fund: Pithead Baths.

THE Miners' Welfare Committee announce that they intend to continue the building of pithead baths as far as practicable under war conditions. During the months of August and September new installations were completed or begun at ten collieries.

Scottish School Building Schemes: Proposal to Proceed.

PERTHSHIRE County Education Committee has agreed to recommend to the County Emergency Committee that, in addition to following the general policy of completing all advanced school-building schemes, arrangements should be made for the immediate resumption of work on all schemes where possible, and where increased costs were justified.

"WAR-TIME BUILDING PRACTICE."

The second of Mr. R. Cotterell Butler's articles on "War-time Building Practice" will appear in our next issue. The first of the series, dealing with "The Field of Activity," was printed in our issue for October 13.

London County Council and Loans to House Purchasers.

IT has been decided that, until further notice, the Council cannot make any more advances to borrowers under the Small Dwellings Acquisition and Housing Acts or sanction any further borrowings by Borough Councils for a similar purpose, except in cases where the Borough Council has already committed itself.

Auckland (New Zealand) Cathedral Competition.

THE R.I.B.A. is informed that, owing to the outbreak of war, it has been necessary to postpone the adjudication of this competition. The Diocesan Board has decided to allow until November 15 for the delivery at the New Zealand Institute of Architects of the drawings of all competitors in New Zealand. The drawings will be sent to England when it is reasonably safe to do so. Competitors in England are granted an extension of time until December 15 to send in drawings.

An Architect's Estate.

MR. HARRY SUTTON CHORLEY, F.R.I.B.A., who died on September 7, left estate of the gross value of £34,677, with net personalty £33,202.

Marriage of Mr. Alfred Cannon.

MR. ALFRED CANNON, F.C.I.S., Director and Secretary of the Southern Counties Federation of Building Trades Employers, was married on September 29 at Horsham to Miss Jeannie McConnell, artist.

IN 1914.

The Lights of London.

PROFESSOR RAY LANKASTER questions the necessity and the wisdom of the present absence of lighting in London, and suggests that, in addition to causing accidents, it may have a depressing effect on our spirits. Increased liability to accident may perhaps be granted, but depression of spirits we doubt. Some . . . probably like it, and feel a sense of relief and repose in the absence of the glaring vulgarities lately disfiguring our streets which enables them to discover a new dignity and charm in the London of their affections.

The A.A. in the Army.

"THE A.A. men here are all fit and well, and I have heard to-day from the Colonel that he has made definite arrangements for grouping us together. He very much appreciates the type of men sent by the A.A., and would like more of them later. We are all determined to hold the next A.A. dinner in Berlin, and it looks as if we shall break the record of the usual dinners unless our casualties are unusually heavy."

Extract from a letter from Mr. Maurice Webb (President) to a member of the A.A. Council.

Art and War.

"THERE is some force in the paradox that war and art are not always enemies and that peace is not always art's best friend."—Professor Selwyn Image.

FROM *The Builder*, OCTOBER 30.

CORRESPONDENCE

Assessment of Air Raid Damage.

To the Editor of *The Builder*.

Sir,—The experience of Edinburgh is sufficient proof that the danger of air raids is by no means removed. Should they occur, the nature and extent of war damage will have to be assessed at a later date.

The making of such assessments would be greatly helped if plans of the buildings before damage were available, particularly if such drawings gave constructional details. Records of most newer buildings are already in the hands of owners, architects, or local authorities, but records of older buildings can seldom be found. In such cases owners would be well advised to instruct their architects to make surveys accurate enough to show plans, sections and elevations of the buildings before damage. Elevations might be photographed, but the plans and sections should be measured and drawn.

E. Stanley Hall,
President, R.I.B.A.,

Decentralisation.

To the Editor of *The Builder*.

Sir,—Mr. R. Myerscough-Walker sent you a remarkable letter a fortnight ago.

Standing on a pedestal, he glances at the correspondence columns of *The Builder*. A glance is sufficient—there is no necessity to read the letters "with any degree of thoroughness," or even all of them, but just cursorily sampling them he finds their authors "following misguided motives," and students generally of the problem as lacking "in a high regard for truth." He finds them stupid, self-interested and foolish for trying to put a scheme into a short letter. Having condemned Utopias, he proceeds to develop his own, and, certainly, if we are to wait until people can "think" and "progress" along the various channels of commerce, marriage, achievement, education, health, and so on, when they "can walk naturally and speak coherently, and when their faces are an æsthetic pleasure to look upon," we shall never get any garden cities.

But, sweeping away all this high-falutin as irrelevant, if he will go to Welwyn he will find men of like passions with ourselves—many of them of high intelligence—living ordered lives in modern buildings, according to their degree and station, factories close at hand, abundant means of indoor and outdoor recreation, and everything that is needed to lift the inhabitants to still higher standards of life. They are not in daily fear of bombs. They do not live in an East End atmosphere.

The results he desires will be obtained by decanting the people from the cities into better conditions, not by first transforming them into paragons of virtue. His "precisely indispensable" remedy is the "precisely impossible," as Carlyle said.

A. W. Crampton, F.S.I.
18, Canfield-gardens, N.W.6.

To the Editor of *The Builder*.

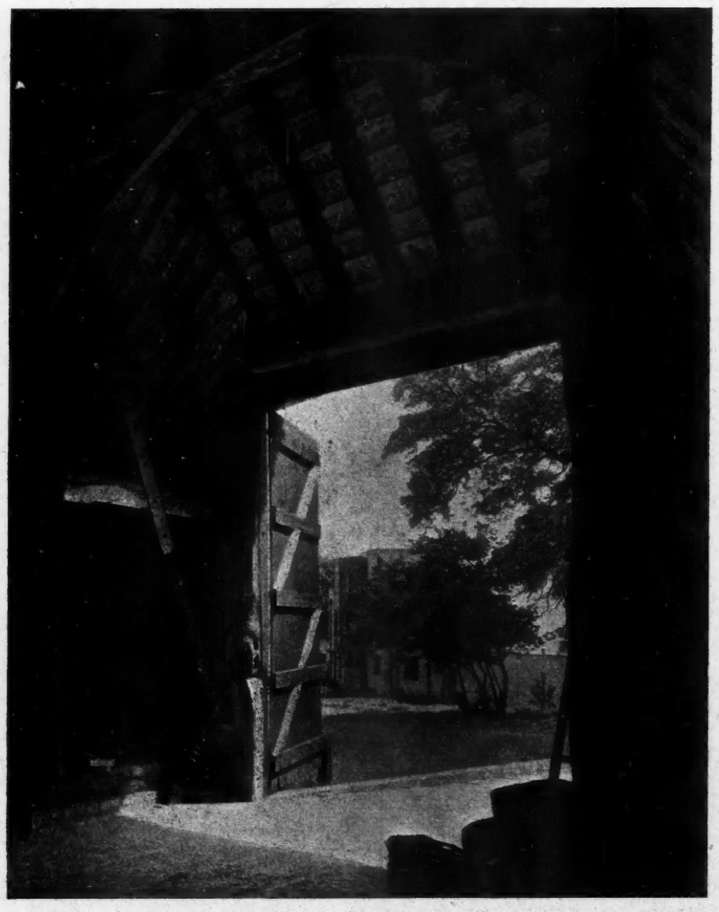
Sir,—I have read carefully Mr. Myerscough-Walker's letter in your issue of the 13th inst. under this heading, and in case my memory should prove defective have the letter in front of me as I write. Mr. Walker, for his part, has only "noticed" and not read "with any degree of thoroughness" the letters he criticises. He devotes half a column to something he only "seems to remember" in one of those letters. Like so many of our younger critics, he enters into a controversy without troubling to study his opponents' view. He shows himself more anxious to preach than to learn.

Mr. Walker claims, I gather, to think more clearly and more originally than his generation, but his views on country society are shared by many people of restricted outlook and education. He attaches no value to the exchange of divergent ideas, as his cursory examination of his opponents' letters shows, but prefers "contact with people who talk his language and think along identical lines." He seems to forget that it is the division of Europe into such groups that is largely responsible for our troubles today.

Instead of exactitude we get, "the average person who cries for decentralisation lives in a city," and, forgetful of Socrates, he claims that it is necessary to be good-looking in order to think clearly. He states "no Utopian idea has ever been found to have practical value," thus tipping into the rubbish-heap all ideological writings, from the Gospel downwards.

These, and many other higher controversial generalities he produces without a shred of any supporting argument. Mr. Walker has decided these things, it is for us to listen and accept. Mr. Walker's letter resembles much modern poetry, in that he sets out in print certain unshaped ideas that are surging in his brain, and which in such form are of little value to others.

R. Jackson.
London.



THE BARN, NEW FARM, ESSEX.

Mr. Sydney Newbery's photograph of an Essex Barn, reprcduced above, was shown at the recent Exhibition of Photography in Commerce and Industry.

OBITUARY

G. B. Booth, F.R.I.B.A.

Mr. A. R. Fox, a friend of the late Mr. Gerald Bousfield Booth, F.R.I.B.A., whose death was announced in a recent issue, writes as follows: "Gerald Booth had been for many years since the last war in the office of the late Sir Guy Dawber and that of the new firm of Sir Guy Dawber, R.A., Wilson and Fox. He was articled to Messrs. Guest, Hubbard and Reimann, of Luton, and was afterwards an assistant in the offices of Mr. Sydie Dakers, Messrs. Pepler and Allen, and Messrs. Richardson and Gill, before eventually coming to Dawber's office. He subsequently started in practice on his own at Surbiton and at Ashford, in Kent, during which time he designed many houses of a distinctive character, as well as being responsible for the restoration of the church at Ockham. He was in the Air Ministry at the time of his death.

"He was a gifted draughtsman, and many of his drawings had been exhibited at the Royal Academy. He was a very keen oarsman, was a member of the Kingston Rowing Club, and for many years acted as regatta secretary to the club, where he displayed the same energy and wholeheartedness for his work that he did as an architect."

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

INFORMAL GENERAL MEETING

An informal general meeting of the Royal Institute of British Architects, at which a general discussion took place on the position of the profession in relation to the war, was held at 66, Portland-place, W.1, at 4 p.m. on Monday, October 23, Mr. E. Stanley Hall, President, occupying the chair.

The President, after stating that the meeting had been called to give members an opportunity for exchanging views and clearing up some doubts, explained the position in which the Institute at present found itself, and detailed the activities which were now being continued by the Institute. This followed the general lines of the statement issued at the end of September and printed in *The Builder* for September 29. These activities would, said the President, be cut down because the Finance and House Committee had disclosed the position that income might be very greatly reduced. The Council, however, would continue to meet, though at rarer intervals; the Executive Committee, reinforced by extra members, would meet as often as required; the Finance and House Committee would continue, and other committees would function mainly through their honorary officers. The Board of Architectural Education would carry on its functions as far as possible, and examinations would be continued. It was intended to keep the travelling exhibitions on the road; these would be looked after by Mr. R. A. Duncan. The "R.I.B.A. Journal" would be continued monthly as long as possible.

On the question of the National Register of Architects, the President said that this was part of the National Service Register, containing the names of about 80,000 professional men; it was administered by the Ministry of Labour, who were approached by all other Government departments. Names were taken from the register—generally about 50 per cent. in excess of requirements—and the selection was actually made by the requisitioning department. Up to now the demand had been almost entirely for juniors. In so far as work in connection with reserved occupations was concerned, the services of the profession had been offered to the London County Council, the Board of Inland Revenue, the Air Ministry, the Admiralty, and the Office of Works. Sir Connop Guthrie, appointed recently as adviser on the building industry to the Board of Trade, had also been approached with the view to the employment of architects by Government departments where these were handling an amount of work vastly in excess of their normal output; Sir Connop had also been asked to help on private work where it did not interfere with Government work.

Other matters dealt with by the President included contracts under the 1931 Form abandoned through the war. This matter had been discussed by the Contracts Tribunal, who were shortly issuing recommendations on the action that should be taken, for which it was hoped to get Government backing. The Tribunal also hoped shortly to issue a form of contract on which tenders could be taken, in which a schedule of prices at time of tendering, plus an "up-and-down" clause, formed the basis; risks of war damage would be borne by the employer, since it would be the employer who would be compensated.

As for the future, matters for consideration included (1) a long-term policy of research into the science of architecture in connection with the Building Research Station; (2) the position of the architect with his kindred professions, with the building industry and with society generally; (3) the possibility of utilising the period of war for extensive research into all the problems in which the profession could be of service to the community in the reconstruction which we hoped would follow the war; and (4) the question of demobilisation and the absorption of serving architects back into civilian life.

Working of the Register.

Mr. T. E. Scott explained the working of the Register. An emergency panel was set up on the instructions of an emergency executive meeting held in September of last year, when the crisis appeared imminent. The first meeting of that panel took place on October 6, 1938, and there were in all nine meetings, the last being in May of this year A number of proposals were made by members of the panel, the most important of which was concerned with the formation of a register of architects. "At quite an early stage," declared Mr. Scott, "and long before the machinery of the Ministry of Labour was put in motion, we obtained advice from appropriate Government departments as to the most suitable form that a register of architects might take so that it could in due course form part of a national scheme. As soon as the Ministry of Labour scheme was in operation we formed part of the National Register. Two copies were provided. One copy was placed in the hands of the Ministry, and one retained here for our own purposes."

The National Register was connected in some way with the Schedule of Reserved Occupations. In the first instance, architects were all reserved from the age of 25. An Advisory Council was set up by the Ministry of Labour to advise the Ministry on all matters relating to the National Register, and to some extent in respect of the Schedule of Reserved Occupations. He (Mr. Scott) was nominated to represent the Institute on the Council, and also served as a member of the Architecture and Public Utilities Committee of that Council. That Committee was not concerned with the Schedule of Reserved Occupations. One might think that it should be; nevertheless it was not.

"Shortly after the Committee came into being an appeal was made for more recruits. It appeared to represent the views of many members of this Institute who had written to the Press and to the Institute about the service of architects, that the age should be high enough to enable as many as ought to do so to take some more active part in the defence services. On our recommendation, therefore, the Ministry of Labour raised the age from 25 to 30. Suddenly, however, without any warning and without any reference to our Committee, architects were removed entirely from the Schedule of Reserved Occupations. Suitable representations were made, and within seven days they were put back again. A few weeks ago, to our intense amazement, the reserved age of architects was left at 30, but pupil architects were introduced into the register to be reserved from the age of 25, and all draughtsmen, including architectural, from the age of 21. That state of affairs was rather remarkable, since it provided that an unqualified architectural assistant was reserved at the age of 21 while a fully qualified man was not reserved until he was 30. More representations were made, and within a few days the matter was put right; and now all engaged in the architectural profession over the age of 30 are reserved.

"As Chairman of the Architecture and Public Utilities Committee, I have on several occasions urged that there should be some closer collaboration between the committee responsible for the register and the Government Committee responsible for the Schedule of Reserved Occupations. I can obtain no satisfaction in principle, although in effect we are able to secure what we think is desirable.

"That register, which I have tried to describe, is administered for the time being in London. Government departments are being requested—I am not sure whether 'required' is the word or not—to apply for all assistance to the register. In some cases, unfortunately, that register is being short-circuited, and I know of at least one case in which an architect on behalf of one of the Government departments has endeavoured to secure the names of architects willing to serve in that Government department, I think on a salaried basis, without any reference to the register. That kind of short-circuiting is bound to go on, and to make more difficult and less effective the work of the register. We are endeavouring to stop it, and shall continue to do the best we can. It has been decided that if necessary the register will be operated regionally, but for the time being recommendations for appointments are being made in London by the panel, which includes three representatives of this Institute."

The President then answered some questions. As to whether it was any advantage to the profession to remain as a reserved occupation, he said that he supposed that that question was being asked by the doctors and quantity surveyors as well as by architects. Unfortunately, as far as he could see, architects had not much say in the matter, because it was decided by the Ministry for the Co-ordination of Defence.

In reply to Mr. S. Rowland Pierce, who asked whether the functions of the Institute were left in the hands of the Emergency Committee, or had they reference to the Council? the President said that they had reference to the Council, to which everything had to be reported.

Questions relating to the staff were answered by Mr. W. H. Ansell, who said that the Institute had on the staff 49 helpers. Of those 17 had been called to one or other of the services or had obtained other employment, and of the remaining 32, ten were under notice, and the residual 22 would remain on the nucleus staff.

In reply to Mr. George Drysdale, who asked could not the Institute ask to have architects removed from the list of reserved occupations, Mr. T. E. Scott said that any decision in connection with the age limit of persons on the Schedule of Reserved Occupations was made by a Man-Power Committee, which appeared to feel very strongly that there might come a time when architects were very much more needed than they were at the moment. For the time being, the reserving of all architects over the age of 30 represented some sort of hardship to those who could not find sufficient employment within the profession and who were not allowed to find employment outside the profession. That point of view had already been put to the appropriate official at the Ministry of Labour, and there was an understanding that from time to time the position would be reviewed.

Mr. George Drysdale said that architects were being reserved as though they were tradesmen. It was stopping numbers of young men getting work, simply because they happened to be architects. Surely the people over 50 could do any work which might result from what the Germans did in destruction?

The President said he felt that the reservation was due to the idea that we might be bombed to bits. That seemed to be the whole attitude of the Government up to now, and he could not help thinking that that was why architects were reserved, and therefore it might be that the Government would reconsider the position. He thought the best

thing to do would be to put the matter very plainly to Sir Connop Guthrie, and ask him what the meaning of it all was. At present it was exceedingly complicated, and mixed up with masses of bureaucracy, which made it immensely difficult to deal with.

MR. GEORGE DRYSDALE said that it only took one Wren to rebuild London last time!

MR. STANLEY HAMP said that if architects were being reserved for some occupation could not the Institute find out what it was?

THE PRESIDENT said that was the question which he was putting to Sir Connop Guthrie.

In reply to a further question by MR. HAMP, the PRESIDENT said some of the allied societies had taken up the "group" system, as in vogue at the Architectural Association, and were forming groups.*

MR. FRANK SCARLETT asked whether the R.I.B.A. was aware that members of the Institute were being accepted for the Officers' Emergency Reserve at the age of 33 and at the age of 39, and, if so, was that compatible with the reservation of architects as a profession?

MR. SCOTT said that the position, as explained to him at the Ministry of Labour, was that an architect over the age of 30 might join the Officers' Emergency Reserve or the Army in any other capacity if his military duties made some use of his technical qualifications.

THE PRESIDENT, in reply to the question: "Does the Public Relations Committee still function with service from its permanent secretary; if not, does not the Council think that now is a most appropriate time for it to act?" said that its permanent secretary [Mr. Eric Bird] had taken up Government work with the Home Office, so that he was not functioning, and the Chairman was also engaged upon Government work. The Institute was considering how the work of that Committee could be most effectively carried out under war conditions.

The next question dealt with negotiations. "Would the Council inform the meeting whether any steps have been taken regarding the following, and, if so, what results have been achieved: the Inland Revenue, assistance in valuation and rebuilding after air raids?" In replying to this the PRESIDENT said that he was on a Committee at the Inland Revenue which dealt with the question of how to value in connection with air raids. At the first meeting of that committee which he attended he discussed with Sir Harriss Firth, the chief valuer, the question of personnel, and later, in conjunction with the Surveyors' Institution and the Auctioneers' and Estate Agents' Institute, had begged him not to neglect the existing practices and firms. The department's method seemed to have been to try to get hold of individuals and get them to put their names on the list.

MR. W. H. ANSELL spoke on a question connected with the Advisory Committee (Shelters) of the Government, the Central Committee, whose chairman was Sir Clement Hindley. The purpose of the committee, which operated regionally, was to show local authorities how they could obtain architectural assistance outside their own offices. Nominations had been made to local authorities, at any rate from the Central Committee; fourteen boroughs had asked for nominations of architects. The names of nine architects had been sent to each borough, a total of 126 in all, but how many architects had been employed he could not say. The Central Committee was endeavouring to discover whether the authorities had taken advantage of this.

In reply to a further question, MR. ANSELL said it was not compulsory on local authorities to get assistance from outside; it was permissive. He personally thought that the authorities ought to be stirred up. He added that the Institute looked to the allied societies to kick-up the first bother in their own neighbourhood, and the Institute would then back them up.

MR. R. A. DUNCAN pointed out that many of the local authorities' schemes were very much behind time, certainly in the outlying parts of London, and, from what he heard, probably even more so in the provinces. Some pressure might be brought to bear by ordinary voters, quite apart from architects as such.

MR. C. G. AGATE said that in Manchester he thought the number of architects employed on Corporation work was 200. As far as he knew all the work which had been given architects by the Corporation up to date was completed.

MR. C. MAX LOCK said that as a member of a borough council he thought that one of the chief reasons why the panels were not used was to be found in the personnel of the council concerned. "There is no personal contact between the profession and the local authorities. In this country there are 2,000 or more speculative builders on their local councils and only 19 architects; you cannot wonder that we are left out of it! What has happened," added Mr. Lock, "has happened because the panels we have set up have not sufficient power, and have not won the consent, or even the interest and knowledge, of public opinion, and consequently there has been no legislation to give the local authorities the necessary power to improve their districts, which they would like to do if there were a drive from behind by an Institute like ours to bring that about."

Assistance for Civil Building.

MR. ROMILLY B. CRAZE said that some of those present might have read a letter which he wrote and which was published in *The Builder*, and he wanted to put forward most earnestly once again the suggestion which he had made, and which to his mind seemed to be the crux of the whole position. He would start by saying that he had in his office a letter from the First Commissioner of Works, in which he said most emphatically that there would be no more work given out to private architects. From that and from his own experience of Government and local authority work, it seemed that there was not much of that work for private architects, and the only work that they could really hope to get was by carrying on with what they had already obtained, jobs which had been already started. "I think that that can be done somewhat in this way," said Mr. Craze. "To me the question is one of insurance. If a town is bombed, what will happen to the buildings which have to be replaced? The solution would be for an insurance scheme to be devised which would enable buildings to be re-erected as they were demobilised or damaged. In that way you would loosen up the whole of the industry. If I have a property, I cannot sell it at the moment, but if I knew that it could be rebuilt from insurance if it were damaged I could sell it tomorrow. There are hundreds of people in that position. If the situation were liquified you would start the whole building industry moving again.

"There is another point. A great deal of work is held up because materials cannot be obtained, and yet I know from my own experience that I have been able to complete one building by continually indenting for a small air raid shelter which was added to that building, and I have got my material through on that ground. That proves that there is a very considerable amount of material available, and I know that that is so from various inquiries which I have made into the control in some of the northern control areas, particularly in regard to timber. There are stacks of timber to be had, and supplies of cement—things which are said to be unobtainable to-day."

THE PRESIDENT said that he had raised that matter with Sir Connop Guthrie. In his letter he had said: "Another matter is the question of private work. I have mentioned above that Government works are for the most part in the hands of a few large contracting organisations. Apart from them, there are throughout the country many other firms, both large and small, who have little or no Government work, and whose organisation soon will be idle. You are aware that a Committee of the Building Industries National Council is investigating the extent to which work is shutting down, and the amount of labour and materials available. If all excess labour aind materials not required by Government activities were made available for private enterprise this step would help the country to carry on instead of stagnate, and would save the waste of years of careful building up of one of the key industries of the nation."

In replying to MR. A. W. KENYON, who asked whether the scale of fees for shelters was satisfactory? MR. CHARLES WOODWARD said that if there were enough basements it was remunerative. By "enough" he meant something considerably over a thousand.

In replying to a question, the PRESIDENT said that at present it was not intended to hold evening meetings, and the President's inaugural address would not be delivered. It was hoped to issue a sort of fortnightly bulletin to the technical papers.

MR. R. C. FISHER suggested that as he understood that the Council was going to meet only quarterly an informal meeting should be held once a month. This was greeted with cheers, and was supported by several speakers.

MR. H. J. PYNE said that as he had heard elderly gentlemen get up that evening and talk about removing the reserved age so as to get—to put it bluntly—the younger ones shot off and the older ones the work, he would suggest that some of the younger and lower paid men should be put on the Emergency Committee. He also suggested that the meetings should be commenced later to enable salaried assistants to attend, and concluded by saying that, as professional men, the Institute should give a lead to the Government and put up concrete schemes.

Planning for the Future.

MR. HARRY MONCRIEFF said that he had hoped to hear some constructive proposals as to what the Institute could do. There were all sorts of things that needed doing. There was the planning of reception areas, where buildings were urgently needed, but beyond that there was the whole question of preparing for peace. "What is the whole building industry going to do when it is suddenly released from war service and allowed to go free? Are we going to have the same kind of unplanned enterprise that we had last time? Surely some responsible architect here with standing in the profession can come forward and give us a real programme that will arouse the enthusiasm and loyalty of the younger men?"

The PRESIDENT said that that question had been anticipated, and the first preliminary meeting was being held that week to discuss the question of planning for peace. It was an enormous one, and he thought that it had to be approached very carefully and from the inside outwards. He did not think that the thing to do was to have a big meeting to discuss it, but to have one or two people to draw up a really good programme and then ventilate it in that way.

MR. PERCY BURNETT said that there were only two possibilities before that surplusage of architects. One was that mentioned by Mr. Scott, the raising of the age of reservation so that all the younger men would be sent into the Forces and the older men would take their places. He did not see how that was going to work, because he could not imagine a man of 45 taking a junior tracer's place in the War Office. The other alternative was for this very large number either to live on what resources they had, or if they had no resources to find some other employment. "I believe that they would think more of the R.I.B.A. if the Council would tell them honestly and openly that there is very little prospect of any employment for them as architects for the duration of the war, and therefore they should look to some other form of employment. I think that that is a matter which we have to face, and the sooner we realise it the better."

MR. A. W. KENYON said that he felt that there was work for architects, and he was sure the R.I.B.A. knew that not many weeks ago £6,000,000 worth of work was given away by one Government department to builders where there was no architect employed.

* This was explained by Mr. Murray Easton recently to the A.A., and was reported in our last issue.

SANDBAGGING

PRESERVATION AND ALTERNATIVE METHODS

By FRANK BENNETT, A.R.I.B.A.

MANY architects, engineers and builders to-day are beginning to feel worried about this matter of sandbags. All over the country breastworks of sandbags have been thrown up to provide a form of protection, which we all felt was necessary, against enemy raiding, and the least we could do in anticipation of trouble to come, perhaps to come both quickly and violently.

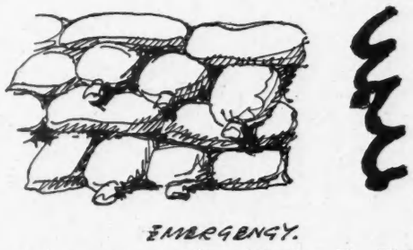
The sandbags have filled the gap, so to speak, but now we are forced to face up to the fact that, despite all the cost and all the labour involved, many of our breastworks, instead of seeing us through the war, are likely to fall to pieces rapidly, and may not last through even the first winter. The recent rains produced sad effects; sandbags are sagging and bulging out of alignment, gaps appear in places and earth is tumbling out, and, especially in country districts, nature gaily begins to assert itself and to thrust out vegetation from exposed surfaces.

This sounds depressing, but the position is not so bad as it might seem. Something has got to be done, and those in responsible positions must be prepared to act, recommend or advise on the position. I wish I were able to say, in one sweeping statement, that if you do just so and so and so and so the whole problem will be solved, you will have no more trouble, and your breastworks will definitely stand up to the elements for three or four years. It is here, once again, that the old tag applies—every case must be treated on its own merits.

If a sandbag breastwork already looks middle-aged, is bulging and shows signs of collapse, two alternatives immediately present themselves. One is—pull it down and build a wall of brickwork or concrete instead, and the other is to rebuild it as a sandbag breastwork, but to build it much more carefully and thoroughly this time, now that the urgency presses with less insistence.

Take first the rebuilding with sandbags. In most cases it will not be difficult to improve on the old job of work. (I think I can say personally I have not seen a really first-class job of sandbagging yet.) The main principle which will be recognised, and one which seems to have been almost completely overlooked, is that no seam should show. All seams go inwards, buried in the body of the breastwork. They are the weak part of the bag, and give first under pressure and wear. No points should show. These should be tucked in before filling, much as a grocer prepares a paper bag for half a pound of biscuits. No bag should be filled to the neck and its end left hanging untidily out of the side of a breastwork. Two-thirds full is enough, with the end tucked neatly underneath. Half-full was the order in the last war. Then beating into position, of course, is most important. By means of the spade the filled sandbags can be hammered flat and modelled into compact, trim and orderly "stones," fitting closely together, even in their coursing, and true in their perpends. The beating will be firm and precise, but not excessive, otherwise the bags burst before the wall is built. Sandbagging is not an occasion for the display of those rustic, very human qualities we expect to find in an old stone wall. It is, or was, a military thing, and calls for a soldier-like precision in the construction. Earth, of course, is organic, and not the proper material to use for filling the bags. If possible, refill the old bags with sand or shingle, or at least with a mixture of these. Sandbags with earth will rot probably five times as quickly as those filled with sand.

Now as regards protection of sandbags: What is the best way to keep out the weather? Creosote is one method, but it gives only a partial protection. It prolongs the life of sandbags, but not indefinitely, and the treatment must be repeated at intervals of, perhaps, about three months. Creosote obtained from the local gas works will do, and should be sprayed on hot, if possible, at a temperature not exceeding 180 deg. F. The man who sprays must be careful not to disfigure existing permanent work. There are waterproofing and preserving paints, rubber paints, the cold application of bitumen, and coating with cement. These have their value, but rely on the sacking for a grip. The essential point is not to brush but to spray them on to the sandbags so that the spray searches well into all crevices and forms a homogeneous coating. Some people cover a breastwork with waterproofing canvas, which keeps out the weather but leaves much to be desired in other ways.



EMERGENCY.

Probably the best of all coatings would be a ¾-in. sprayed coating of cement gum, provided the cement gum were given a groundwork of something stronger than sandbags on which to grip. Chicken wire, or preferably expanded metal, well secured and fitting closely to a breastwork would provide the suitable key or groundwork. Without the metal ground acting as a reinforcement, the cement gum would crack unduly, let in water, and prove more or less useless. But the snag in this is to obtain not only the cement but also the metal, both controlled materials.

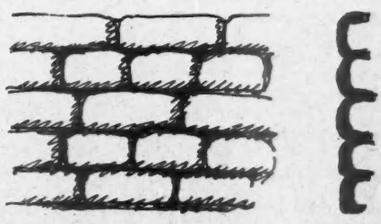
The expense of adding special protection at the base of a sandbag breastwork seems to be justified. Breeze walling or timbering to a height of, say, 3 ft., protects the bags from being knocked about and other nuisances. Near the top, damp-coursing as for an ordinary wall might well be considered, too.

Now consider the question of rebuilding entirely with another material instead of sandbags. Brickwork suggests itself at once, because brick seems to be the one building material at the moment which is readily obtainable. We could fill in semi-basement windows with brickwork; with bricks we could erect screen walls in front of ground-floor doorways, and even revetments consolidating the entrance to public trenches could be of brickwork. But there are several disadvantages to this. Psychologically, I think, we dislike the very permanent look of brickwork for such a purpose. Brickwork can look too ugly and repulsive even for war time, if not handled with care and properly related to neighbouring materials. Secondly, brick walls need foundations, while sandbag breastworks, with their spread-out bases, need none. Thirdly, a short length of brick wall, when isolated, even when supported on a foundation, is less stable than sandbagging. But on the other hand, brickwork probably costs no more than the sandbagging; it is no economy to employ unskilled labour on sandbag work; bricklayers and stonemasons are necessary. Lime can be used instead of cement for the mortar in brickwork. Sandbags appear to offer better resistance to splinters than brickwork, but this is not necessarily so; 13½ in. of brickwork ranks as a protection equal to 2 ft. 6 in. of earth-filled sandbags. Brickwork has been employed successfully as a protection at B.B.C. headquarters in London.

Many breastworks of satisfying strength have been constructed by means of timber casing filled with earth, sand, rubble and the like. These are likely to withstand the elements better than sandbags, but still, in the majority of cases, they cannot rank as permanent protection. Last week I saw one with an open top. Rain had soaked in and sodden its earth filling, and the timber sheeting, although solidly built, bulged ominously. The value of this sort of protection, of course, depends almost entirely on the permanence of the materials which can be obtained. A durable outer cover, like steel, will effectively contain a perishable core like earth, and, *vice-versa*, a semi-permanent cover like timbering will prove satisfactory as a cover to a core of, say, cement and rubble. But again the question of permanence is dominated, not by cost, but by the supply of materials obtainable. Corrugated iron *may* be obtained, but mild steel is as scarce as gold. Earth with timber casing, like sandbag work, must be thoroughly protected from the weather if it is to last.

I have also recently seen light concrete containers built up of hollow tile, in which earth, sand, rubble, etc., can be placed. These may be either for temporary or permanent use, though in the latter case they would naturally be filled with mass concrete.

In conclusion, I suggest that brickwork offers the greatest possibilities; at the same time it seems best that conclusions should not be too hastily drawn. A good means for arriving at a solution will be for all of us to pool and compare our experiences. The next few months will give us opportunities to experiment.



MILITARY.

A.A.S.T.A. LECTURES ON A.R.P.

THE opening lectures in the series being given by the A.A.S.T.A. on Air Raid Precautions were held on October 16 at the Kingsway Hall, Kingsway, W.C.2. The two lecturers, Mr. William Sedley, legal adviser to the A.A.S.T.A., and Mr. John Pinckheard, A.R.I.B.A., provoked an interested discussion. Mr. Sedley dealt with the legal problems of A.R.P., the rights and duties of local authorities, and Mr. Pinckheard described different types of emergency shelters.

"A.R.P. EMERGENCY MEASURES."

MR. A. PINCKHEARD said that his lecture was confined to the problem of providing structural protection for people. There were many other aspects of A.R.P. which came within the scope of "emergency measures"; for example, precautionary measures against looting from smashed shop windows, and, again, the obscuration of lights. Those were questions which the architect would often be called upon to give advice on, but for the moment he would consider only the central aim of A.R.P., which was to save lives.

The term "emergency measures" was a difficult one to define, but he thought that every effort should be used to ensure a degree of protection which did not fall short of the standards set out in the A.R.P. Code.

Basic Considerations.

"In the design of all shelters, whether they are emergency measures or permanent structures, there are," continued the lecturer, "three basic considerations which affect the safety of the occupants. I propose to deal very briefly with these—not to discuss the relationships of these factors with each other, for this will be dealt with in a later lecture—so that we shall have some theoretical background for the measures we put into practice.

"It cannot be over-emphasised that, although the size of a shelter generally is limited in terms of the number of persons it may accommodate, the rated capacity of the shelter is not a factor of primary importance affecting the safety of the occupants. I know that this statement will be challenged. People will say—'Surely, if you cram twice as many people into a shelter as it would normally hold there must be a greater risk. A direct hit would kill twice as many people as before.' It is perfectly true that *if* a bomb fell on the shelter everyone would be killed, but the chances of a bomb falling on a shelter are in proportion to its target area—not to the number of people in it. By doubling the number of people in a shelter the chance of a direct hit is not increased. But if the area of the shelter is doubled, then the chance of a direct hit is doubled. We can say this in another way. A single individual alone in a shelter designed to accommodate 100 persons is no more or less safe than if the other 99 were there.

"It is necessary to dwell on this point because of the prevalent confusion between area and capacity. It is not limiting its capacity to 50 which increases the safety of a shelter but limiting its area. The two things usually go together but not necessarily so. A shelter for 50 will probably be twice the area of one for 25, and therefore be less safe. However, the shelter might be so arranged that it accommodates 50 people on the same target area as one for 25. This might be done, for example, by arranging the shelter in two tiers (as with a basement and sub-basement) or possibly by halving the floor space per person by the installation of a higher capacity ventilating plant.

"The Code recommends not more than 50 persons per shelter or compartment of a shelter, each person having a minimum floor space of 6 sq. ft. That means that the area of the shelter will require, to conform to the Code, an area of not less than 300 sq. ft. The Code sets no upper limit, so that the area can be increased to secure better ventilation, greater comfort and so forth. Any such increase in area must inevitably decrease the safety of the shelter, and personally I think it is a mistake to increase comfort at the expense of safety. Rather I would advocate that the area be kept down to the minimum of 6 sq. ft. per person, and, if necessary, ventilation can be improved by mechanical means.

"Where measures are of an emergency character, it must be admitted that practical difficulties arise in limiting the size of shelters to 300 sq. ft. The Code, however, does permit shelters to accommodate 200 persons which at 6 sq. ft. per person gives a total area of 1,200 sq. ft. This area I would advocate as the absolute top limit for any shelter, emergency or otherwise. To sum up, I would say that the target area of the shelter should be kept down to a minimum.

Lateral and Vertical Protection.

"Let us turn now to lateral and vertical protection. The most generally adopted form of protection for emergency shelters is sandbags. The Code sets a minimum thickness of 1 ft. 6 in. The wall thickness of 2 ft. 6in. is claimed to be capable of resisting the blast and splinter effects of a 500 lb. bomb bursting not closer than 50 ft. Where brickwork forms the lateral protection it is officially recommended that it shall not be less than 14 in."

There were two main categories of shelters "independent shelters" and "shelters in buildings." Of the "independent shelters" only two types were possible as emergency measures. These were trenches and shelters above ground level built of sandbags or similar material. Independent shelters had the advantage that on open sites the danger of falling debris was entirely eliminated. The most usual form was trenches, and provided that soil conditions were suitable these were always to be advocated in preference to above-ground types. Of all types of shelter which could be erected in a hurry in an emergency, trenches were the safest, though almost certainly not the most comfortable or the most convenient. There should not be more than 50 people for each straight length of trench. A convenient section was 7 ft. by 5 ft., which is sufficiently wide for people to sit along each side. Where necessary the trench need not be excavated the full 7 ft., but could be excavated to a less depth and the excavated earth could be used to build up the sides to the required height and form the roof. It was worth mentioning that only 1 ft. 4 in. of excavation was saved, as it was necessary to excavate down to 5 ft. 8 in. to provide sufficient earth for the top and side protection.

"The other type of independent shelter which we can consider as an emergency measure," continued the lecturer, "is the above-ground shelter built of sandbags, earth, etc. They should only be adopted where trenches are unsuitable or impossible. The presence of pipes, for example, may make excavation impracticable or water mains might constitute a risk of flooding. The ground may be waterlogged. In these cases the above-ground type of shelter must be used. The wall material need not be confined to sandbags—earth, ballast, road metal, coal or other similar material can be made use of.

Shelters in Buildings.

"Shelters in buildings are much more frequently met with than independent shelters. They also involve much bigger problems for the architects. The merits or otherwise of shelters in buildings depend very much on the particular building, and it is impossible to lay down any very hard and fast rules. All shelters in buildings are exposed to falling debris. This is an inherent disadvantage of shelters of this category, and it should always be remembered that the safest and strongest basement shoring in the world does nothing more than protect the occupants of the shelter from a danger which would not exist in an independent shelter (such as a trench) on a fairly open site.

"The upper floors of a building may be a liability or they may be an asset. From the point of view of construction buildings can be classified into A class, B class and C class buildings. A class buildings are those which have steel or reinforced concrete frames; B class buildings have weight bearing brick or masonry walls with concrete or steel and concrete floors; C class buildings have weight-bearing brick walls with timber floors.

"A class buildings—that is framed buildings—are, of course, the safest, and where it is necessary to improvise shelters in existing buildings it is this class that should be used. The upper floors of these buildings can be regarded as giving a fair measure of overhead protection.

"B class buildings similarly offer some overhead protection, but the absence of a frame makes them liable to collapse. Heavier débris loads render necessary stronger shoring than for A class buildings.

"C class buildings should be avoided wherever possible, as the overhead protection is practically nil and danger of complete collapse of the building on top of the shelter is considerable."

OFFICIAL NOTIFICATIONS

GRANTS FOR AIR-RAID SHELTERS.

The Minister of Home Security announces that his department is ready to receive applications for the payment of the Government grant provided under Section 22 of the Civil Defence Act, 1939, to occupiers of factory premises and owners of commercial buildings in the specified areas who have completed the provision of air-raid shelter in fulfilment of their obligations under the Act.

Forms on which grant may be claimed have already been issued and may be obtained by occupiers of factory premises from the district factory inspectors and by owners of commercial buildings from the local authority of the area in which the building is situated.

Applications by persons in the specified areas employing not more than 50 workpeople who have provided shelter for their employees, and by persons outside the specified areas who provided shelter for their their employees before the passing of the Civil Defence Act should be made on special forms obtainable from the A.R.P. Department, Cleland House, Page-street, London, S.W.1.

A large number of claims is anticipated, and it would greatly help the department if application by those who have completed their shelters is made as soon as possible. Applications for grant will be dealt with in rotation.

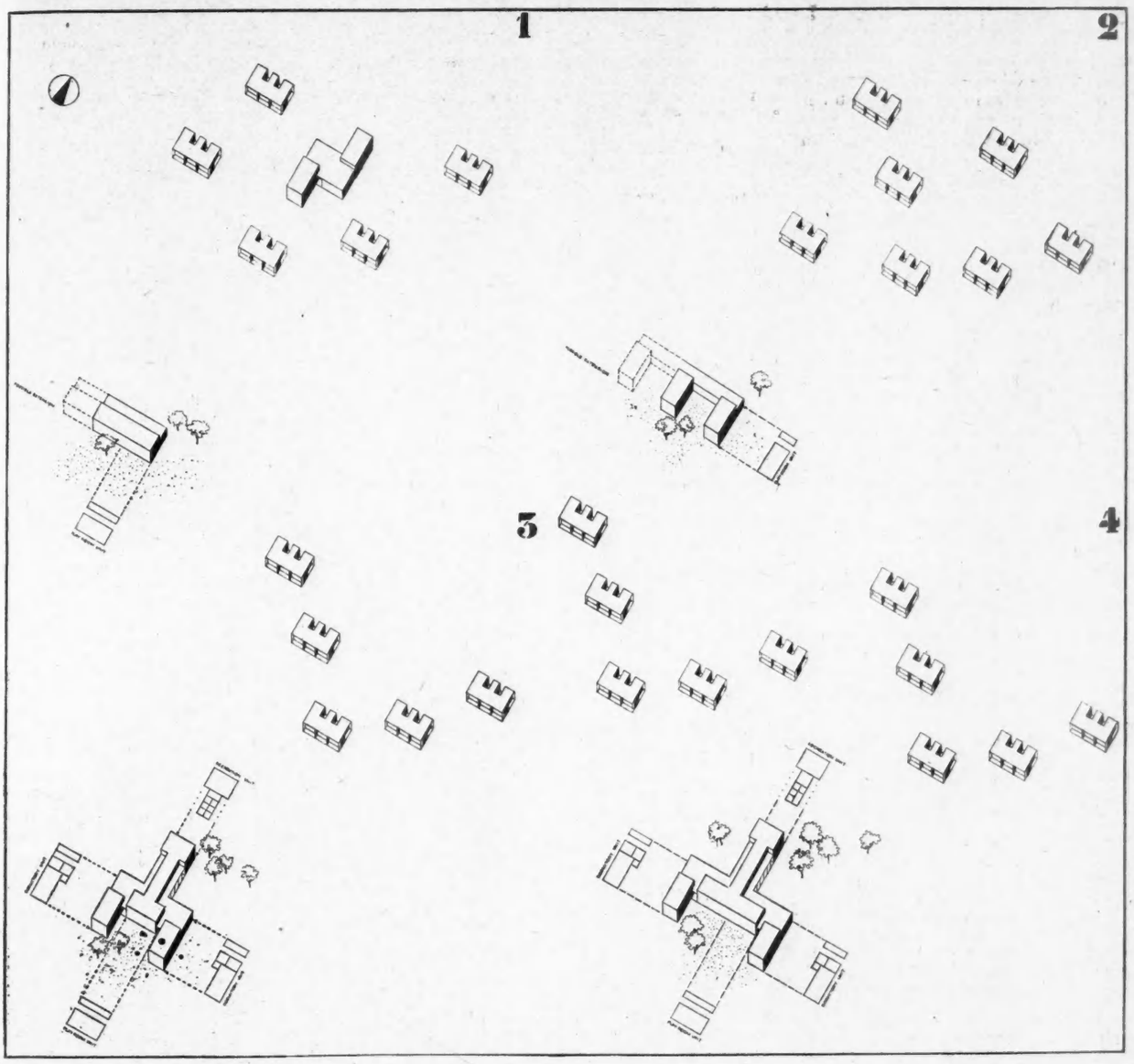
SCRAP IRON AND STEEL.

The Ministry of Supply (Iron and Steel Control) have issued from Steel House, Tothill-street, S.W.1, an appeal to industrialists to augment the national supplies of scrap iron and steel, and ensure that these become available to the steelworks at the earliest possible moment. Many factories and commercial premises, it is pointed out, contain such items as discarded machines, machine parts, old steel pulleys, shafts, broken tools, disused piping, metal sheeting, unwanted dies, jigs, old metal containers: these and any articles containing iron or steel can now be put to national use. Industrialists are therefore asked to get into touch with local scrap iron merchants and dealers, who will quote for this material and arrange prompt collection.

EMERGENCY ADDRESSES

The address of the NATIONAL FEDERATION OF BUILDING TRADES OPERATIVES is now "Dalton Hill," Albury, near Guildford.

The new address of the ZINC DEVELOPMENT ASSOCIATION is Lincoln-buildings, 15, Turl-street, Oxford (telephone: Oxford 47968). The Association's technical service will be continued and advice and information given on the supply and use of zinc during the war period.



FOUR TYPICAL LAYOUTS.

EVACUATION CAMPS FOR MOTHERS AND CHILDREN

AUTHORS: MR. ERNO GOLDFINGER, D.P.L.G., AND MISS MARY CROWLEY, A.R.I.B.A. (MEMBERS OF A.A.S.T.A. EVACUATION COMMITTEE), IN COLLABORATION WITH MISS ANNE PARKER, A.R.I.B.A.

THE Report of the Evacuation Committee of the Association of Architects, Surveyors and Technical Assistants (given in our last issue) maintains that evacuation cannot be a success without new buildings, and therefore, whatever the difficulties, the task must be tackled at once and carried through to completion.

The Report lays emphasis on the need to establish, for the mothers and small children, social centres with facilities for communal meals, rest, and recreation for the mothers who remain in billets; residential nursery schools for the young children, which can be combined with living accommodation for those mothers who remain with their babies.

"Without making a more detailed study it is impossible to estimate the capital cost of a complete building programme as suggested in this report. It is of interest, however, to compare with the cost of new buildings the money the Government are spending on billeting. Assuming the war will last for three years, the Exchequer will spend more than £60 in this time on the weekly payments for lodging only (excluding food) of a mother with her child. For little more than this sum they could be provided with a place in a new building designed for them." It is suggested that small communities on the scale of family groups, with privacy as well as social amenities, are necessary. These must be planned near an existing village or market town so that the life of the neighbourhood could be shared. Site plans will vary according to local conditions, but all require a number of basic planning elements. (See page 616.) These have been analysed, and examples of their combinations shown.

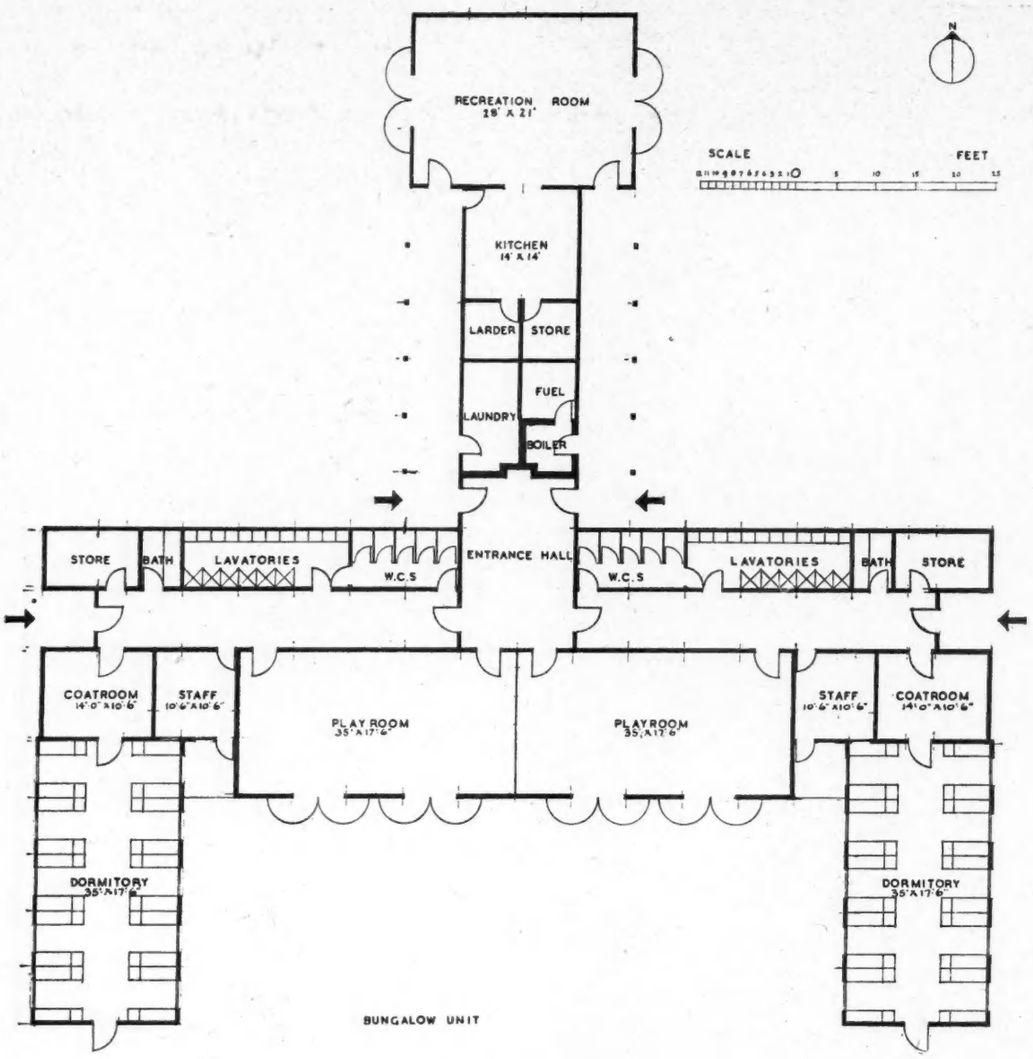
The diagrams shown above are:—

1.—Camp for 20 mothers and babies and 40 children. All children sleep in dormitories, but away from the nursery school.

2.—Camp for 20 mothers and babies and 40 children. All the children sleep in bungalows. One playroom unit is used as a recreation and dining room for mothers.

3.—Camp for 20 mothers and babies and 40 children. All the children sleep in dormitories.

4.—Camp for 40 mothers and babies and 80 children. Forty children sleep in dormitories, and 40 sleep in bungalows with their mothers, as if in their own homes.



(*Below*) PLANS OF INDIVIDUAL UNITS COMPRISING CAMP. (*Above*) TYPICAL ASSEMBLAGE OF UNITS.

EVACUATION CAMPS FOR MOTHERS AND CHILDREN.

NEW FIRE STATION FOR THE CITY OF BATH.

MESSRS. ALFRED J. TAYLOR & PARTNERS, ARCHITECTS.

GENERAL.—This building is situate in Cleveland-place, Bath, and is the city's latest contribution to fire-fighting services. It was opened by Sir Vivian Henderson, Chairman of the Fire Service Commission.

PLAN.—The first floor contains the parade and lecture room which can accommodate 250, the men's rest-room (each man having his own locker), and a kitchen where the firemen can cook their own food (being on the two-platoon system).

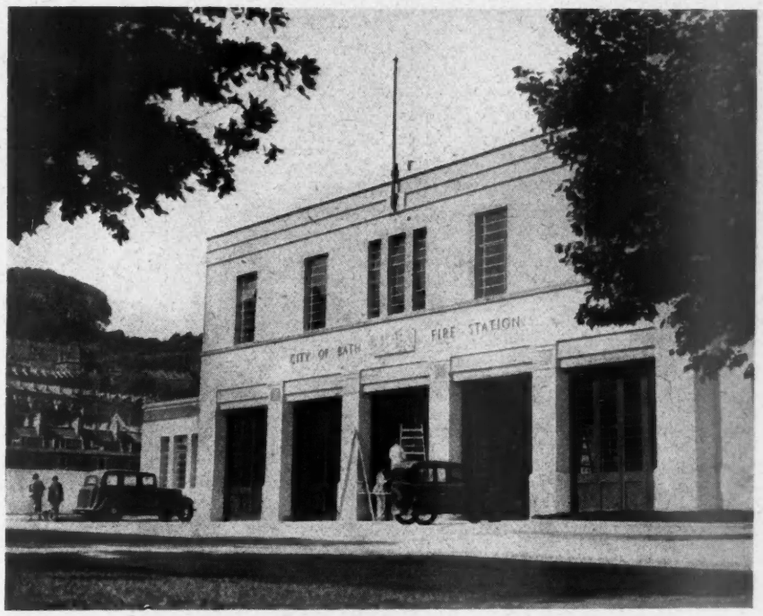
The building is designed on the ground floor to accommodate a five-bay engine-house, with electrically operated doors from the watch-room. The drill tower is 65 ft. high, and the front portion is for drill and hook-ladder and rescue work, the rear for hose drying. At the rear of the tower is a smoke- and gas-chamber. The heating throughout the building is by gas, and the engine-house is heated by means of hot-air fans. On the ground floor are a hose-room and general stores.

In the yard there is an underground tank for drill purposes, and the water is drained back from the tower to the tank. Inside there is a system of internal telephones. The workshop has two inspection pits.

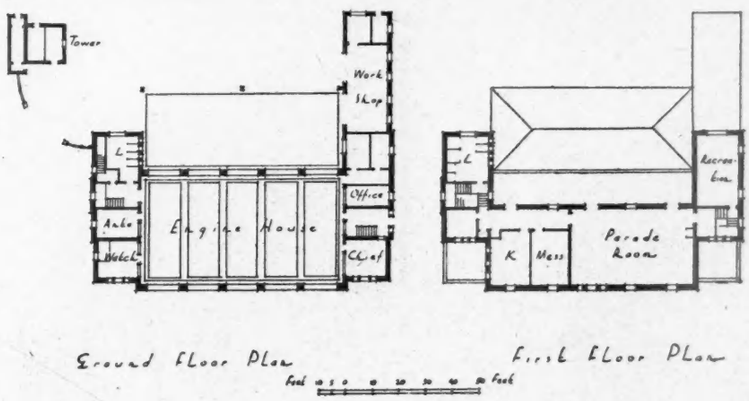
CONSTRUCTION.—The building has been constructed on a piled foundation; walls are of Bath stone with brick backing on r.c. framing.

The general contractors were Messrs. J. Long and Sons, Ltd., of Bath. The following are the sub-contractors: G. Carey and Son, heating; Central Electric Co., electric wiring; Stevens and Adams, wood-block floors; Rowe Bros., metal windows; Standard Patent Glazing Co., roof lights; Bladwell and Co., sanitary fittings; Constructors, Ltd., ironmongery; and Gardiners, Ltd., metal lockers and steel.

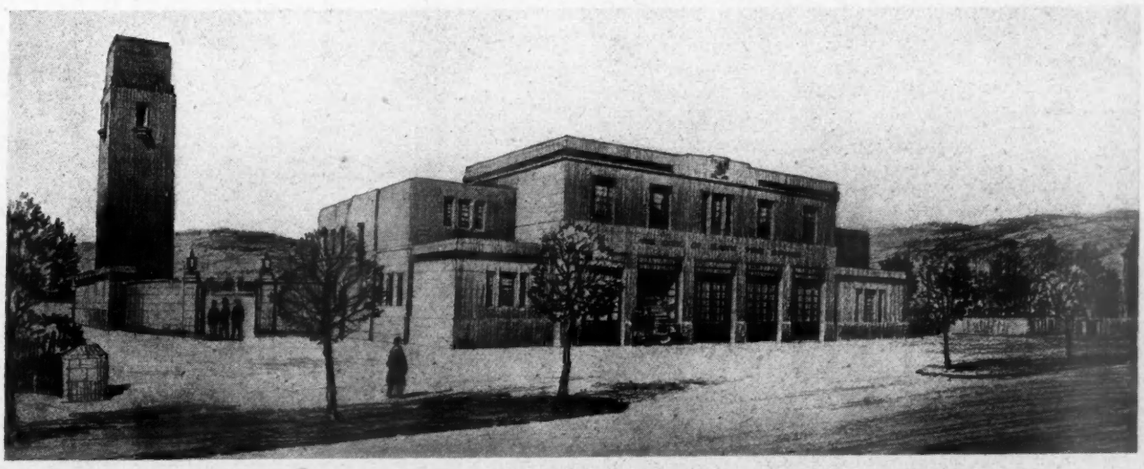
The consulting heating and electrical engineer was Mr. E. Hamilton; clerk of works Mr. W. Lanham.



VIEW OF MAIN FRONT.

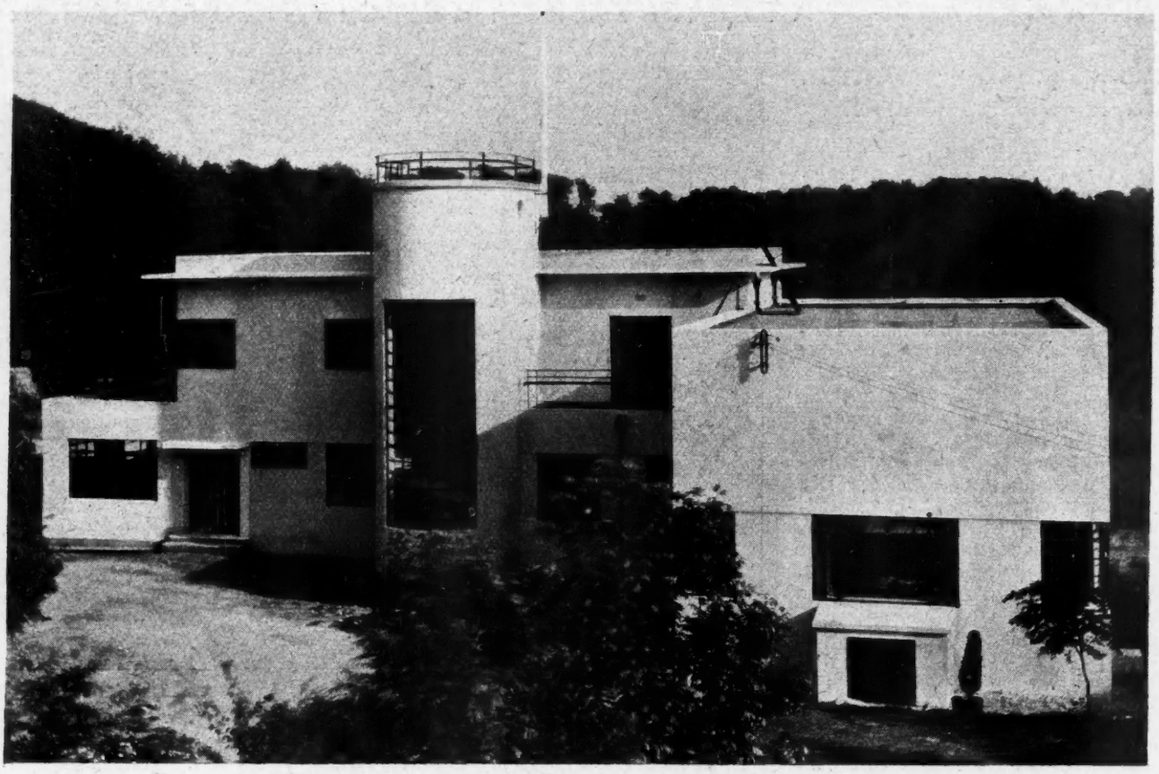


PLANS.



A. C. Fare, *delt.*

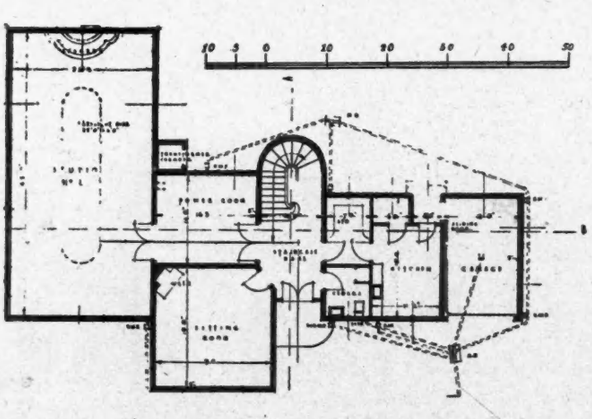
PERSPECTIVE OF SCHEME, SHOWING DRILL TOWER.



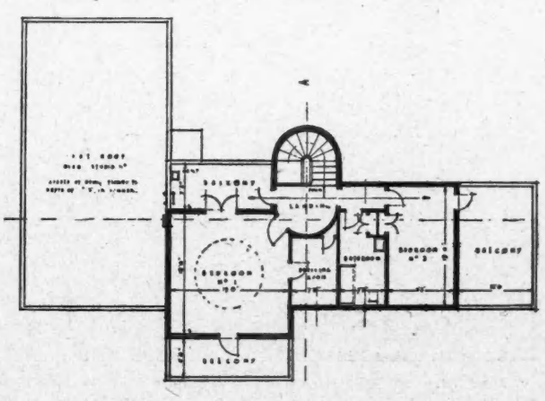
"KILOWATT HOUSE," NORTH ROAD, BATH.

MISS MOLLY TAYLOR (OF ALFRED J. TAYLOR & PARTNERS), ARCHITECT.

STUDIOS for scientific experiments and bachelor's living apartments for the client, Mr. A. Greenhill, are contained in this house, whose main feature is a studio 45 ft. by 23 ft. by 16 ft. 4 in. high. Walls, roof and floors are of reinforced concrete, the consultants being the Trussed Concrete Steel Co., Ltd., The flat roofs are capable of being flooded with 3 in. of water for experimental work. On the roof is a canopied shelter for television purposes. The general contractors were Messrs. Hayward and Wooster, Ltd., of Walcot-street, Bath, Somerset.



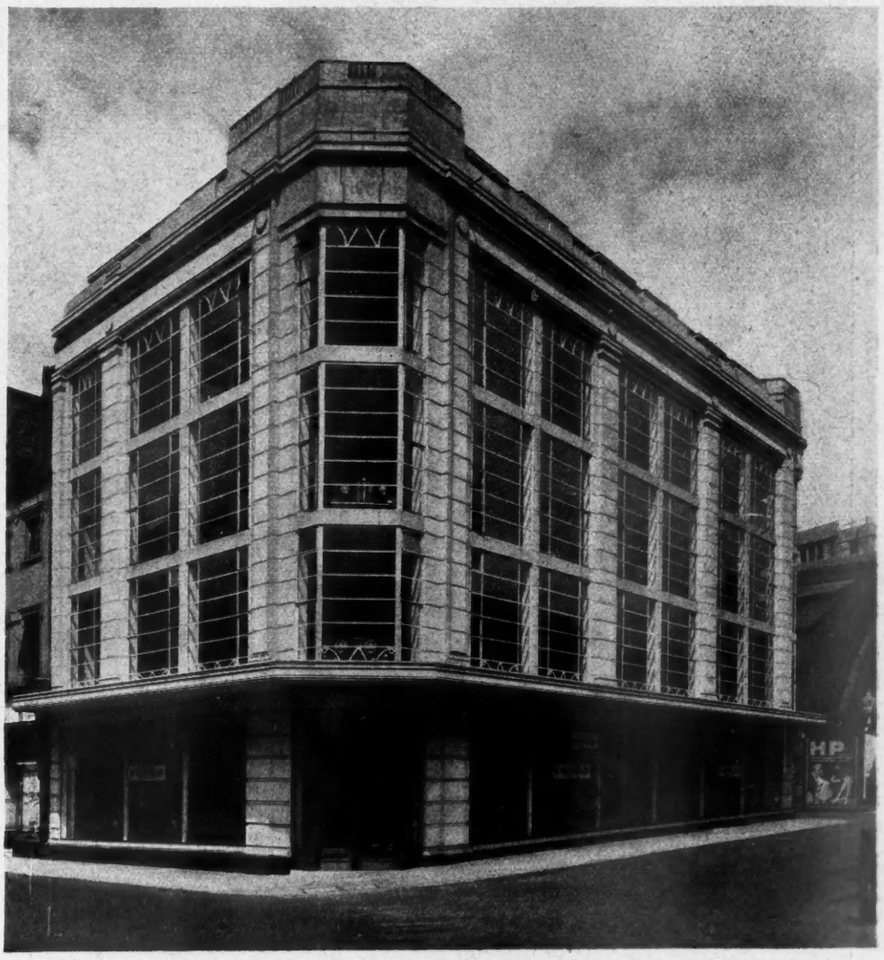
GROUND-FLOOR PLAN.



FIRST-FLOOR PLAN.

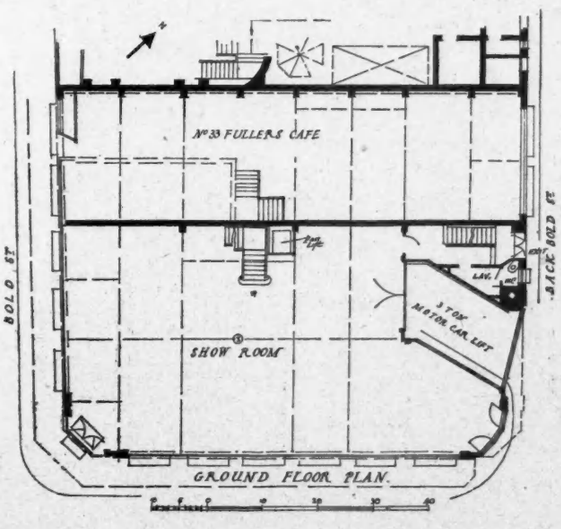
MOTOR SHOWROOMS, BOLD STREET, LIVERPOOL.

MR. D. A. BEVERIDGE, F.R.I.B.A., ARCHITECT.



GENERAL VIEW

THESE premises, comprising six floors with a total floor area of about 21,600 sq. feet, have recently been opened by Messrs. W. Watson & Co. (Liverpool), Ltd. The building is steel-framed with solid reinforced concrete floors finished with magnesite. Large windows are provided on three sides and the structure is designed for an extension to Bold-street when the adjoining property becomes available, and this will provide further showroom space on four floors.

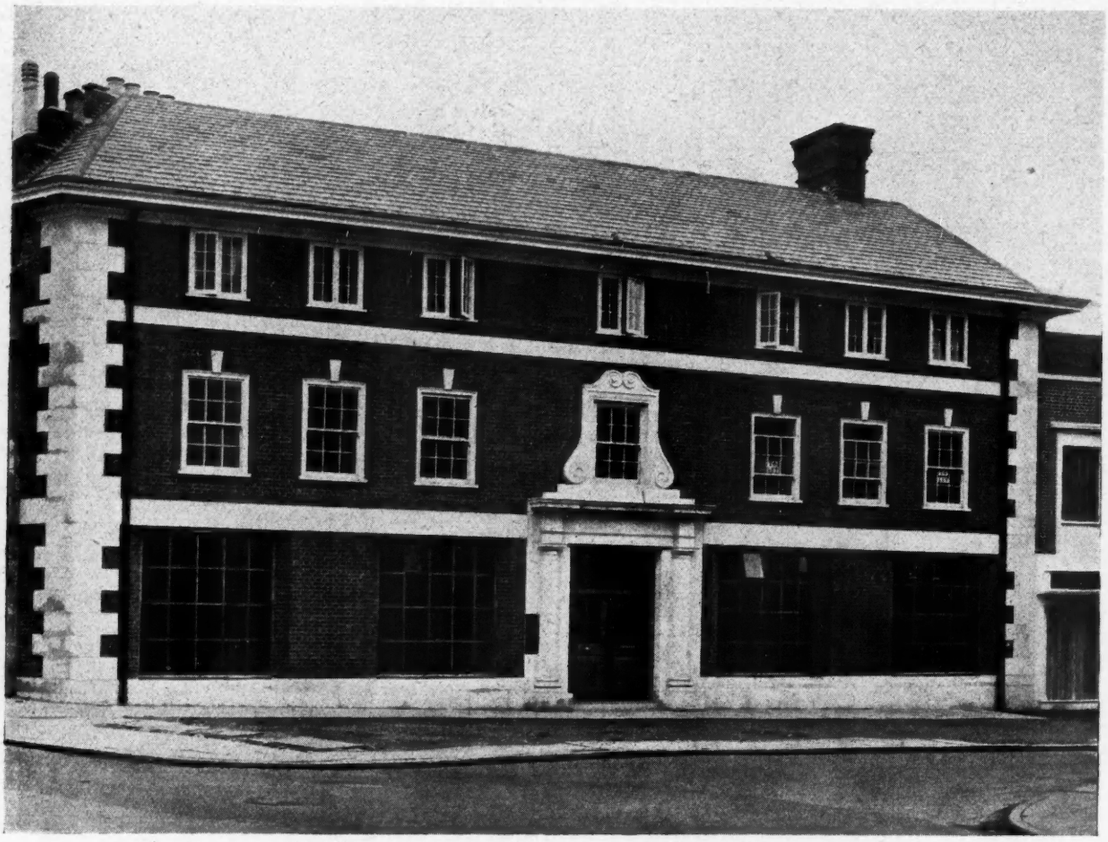


The building has been designed to give the maximum open unencumbered floor space, and is on simple and economical lines, the steel-frame dominating the layout of the façades and large windows are provided so that motor cars will be visible from the street on all floors except basement, showroom and top floor—which are occupied as offices. The design is on the same lines as the London branch in Grosvenor-road, S.W.1, illustrated in *The Builder*, September 13, 1935.

The canopy, besides acting as a sunblind and arcade, provides a convenient support for ladders from which the large windows can easily be cleaned from the outside at week-ends.

Messrs. Rimmer Bros., Ltd., of Liverpool, were the general contractors, and the following is a list of the sub-contractors: Steelwork, MacIntyre & Sons., Ltd., Liverpool; reinforcing to floors, Trussed Concrete Steel Co.; flat roof, Turners Asbestos Cement Co.; steel sashes, Rustproof Metal Window Co., Chester; motor car and passenger lifts, Evans Lifts, Ltd., Leicester; white cement and plasterwork, J. B. Johnson & Co., Liverpool; sanitary goods, Musgraves, Ltd.; h.w. heating, etc., A.C. Plumbers and Domestic Engineers, Liverpool; pavement lights, Haywards, Ltd.; precast non-slip steps, Artificial Stone Co.; iron doors and railings, Bowman & Beddows; plumbers, Walter, Willcock, Ltd.; and composition floors, The Magnesite, Terrazzo and Mosaic Co., Liverpool.

NEW SURGERY PREMISES, UXBRIDGE, MIDDLESEX.

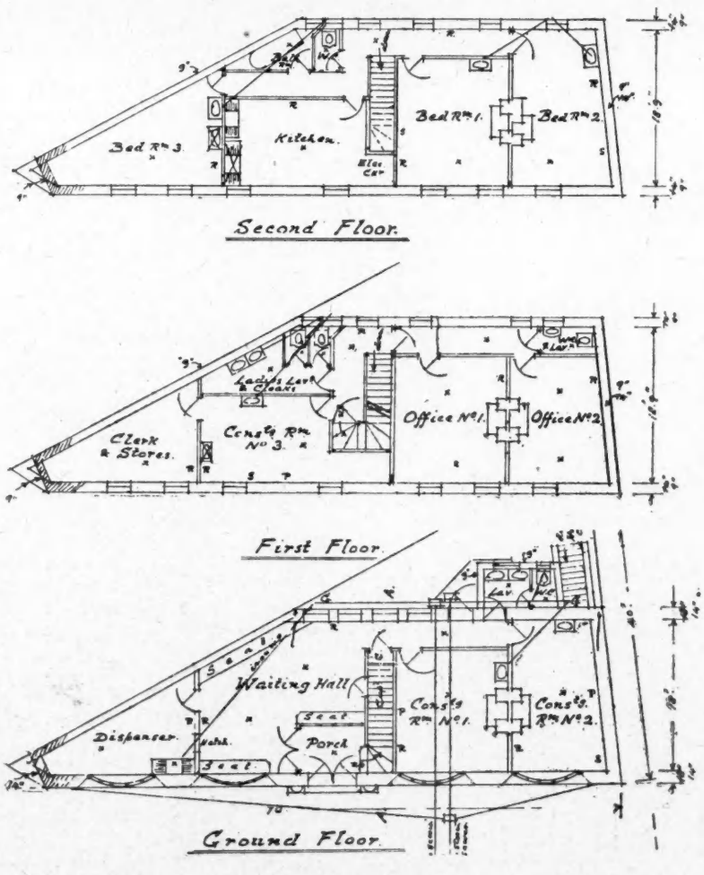


THE building shown forms an interesting example of an adaptation of the "Georgian" style of façade for a provincial town such as Uxbridge. The rebuilding has been in connection with the widening by the Middlesex County Council of the bottle-neck access from High-street to Vine-street.

The Uxbridge doctors for whom the premises have been erected attached considerable importance to maintaining their original position, as surgery premises have been located on that site for several centuries. The façade is carried out in multi-colour, red Sussex bricks, with cast stonework dressings, the main eaves cornice being in wood painted to resemble the stonework. The bow windows on ground floor and the main entrance doors are in limed oak. All door furniture, etc., is in chromium, including the name-plate, on which the lettering is designed in Trajan style and carried out in red fired enamel. The floor of the waiting hall is carried out in an interesting design (sketched in Italy) of large rectangles of mother-of-pearl and small squares of green composite paving-slabs. The floors of the consulting rooms are Jarrah blocks with walnut bordering, and the doors are mahogany flush bordered with walnut. The fireplaces are designed in the Queen Anne manner with polished Roman stone hearths and surrounds. The dispensary is fitted out with glass-lined cupboards and shelves with mirror backs. The main roof is covered with green Westmorland slates.

The main contractor was Mr. W. S. Try, of Cowley. The stone dressings were by Girlingstone, of Feltham, and joinery by J. G. Cherrington, of Gerrards Cross.

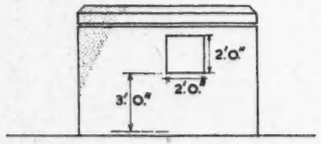
MR. FRANCIS BACON, ARCHITECT.



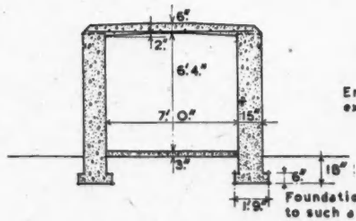
PLANS.

FACTORY SHELTER FOR 50 PERSONS · ABOVE GROUND ·

CLEAR WIDTH 7'0" CLEAR HEIGHT 6'4" AREA PER PERSON NET 3·78 SQ. FT.
ROOF TO CARRY 400 LBS. PER SQ. FT. PLUS ITSELF AT CODE STRESSES + 25%.

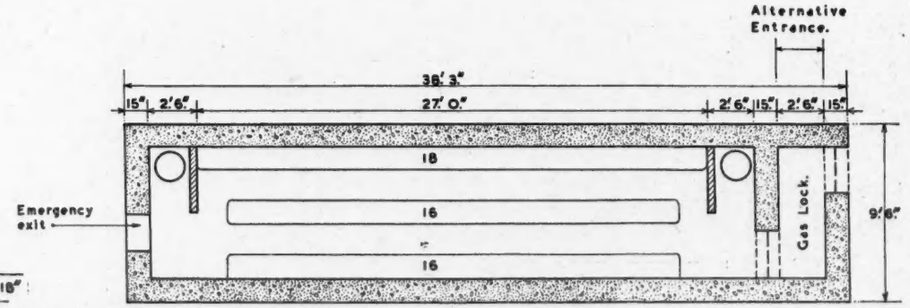


END VIEW AND EMERGENCY EXIT ·



GENERAL CROSS SECTION ·

Foundation to be taken to such a depth that the ground is able to carry a weight of 1 ton per sq.ft.



PLAN

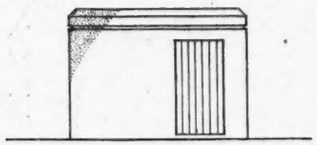
QUANTITIES..

EXCAVATION.	9·0 cu.yd.
CONCRETE Walls.	34·7 cu.yd. 1:3:5.
DO Roof & Floor	9·0 cu.yd. 1:2½:4.
FORMWORK.	200 sq.yd.
REINFORCEMENT.	520 lb.

BAR DETAILS · ¾" cover throughout

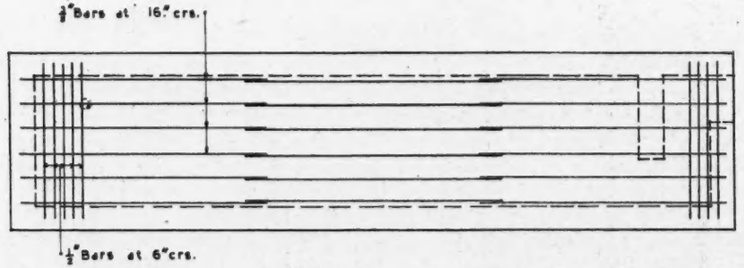
ROOF.

73 - ½ - 8'9"
18 - ½ - 13'6"



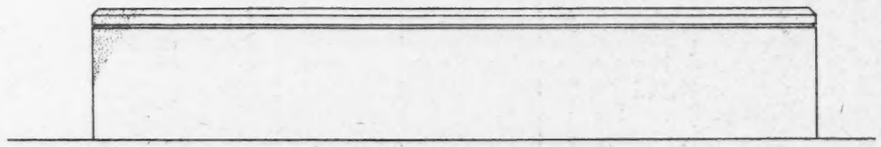
ENTRANCE ELEVATION ·

NOTE. Door frame should be fixed in order that gas-door may be hung if necessary.



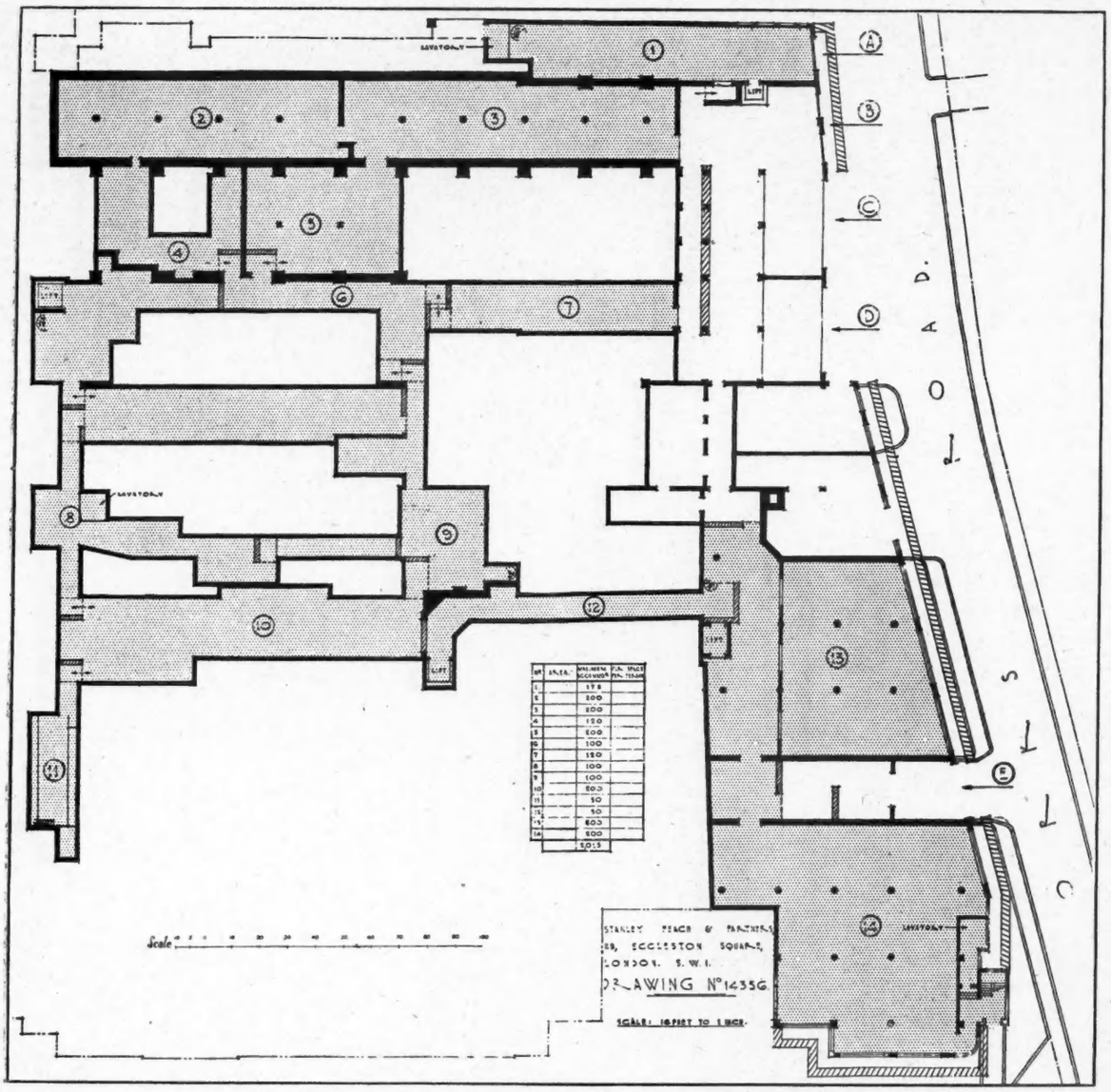
ROOF ·

EMERGENCY EXIT - May be formed with steel plates or precast concrete slabs. recessed into wall if desired. The space between being filled with small gravel.



SIDE ELEVATION ·

This Factory Shelter, for 50 persons, is above ground. A gas lock is provided at the main entrance. There is an emergency exit. This shelter should not be placed within 50 feet of another on the surface. A schedule of quantities is given.



A GROUP OF INDUSTRIAL SHELTERS

MESSRS. STANLEY PEACH & PARTNERS, ARCHITECTS.

In the group of shelters illustrated the existing basement had to be strengthened to accord with the Civil Defence Code and adapted for defensive purposes.

The works, which lie in a provincial district, cover a very large area and employ over 2,000 people, and it was found impossible to build trenches on account of physical and safety reasons; special dispensation was therefore obtained from the Home Office to arrange for the shelters to accommodate the maximum allowed by the Defence Code, namely, 200 persons per shelter. The bulk of the shelters are completely underground and built into the solid chalk.

The factory has been constructed on the side of a hill and approach to the shelters is by way of the service road; it has, therefore, been arranged that the whole of the staff leave the main building by way of the main road, and walk down the hill to the service road, and thence to the shelters. This allows plenty of room for a large number of people to emerge at once from the numerous entrances at upper floor level and proceed, in the open air, to the basements, thus avoiding crowding and the consequent danger of panic.

As the bulk of the factory consists of a one-storey building above the shelters, the debris load is practically negligible, also all heavy machines are carried independently of the overhead construction.

The main construction of the shelters is of brickwork and reinforced concrete and revetments between the shelters (indicated by hatching) are of highly compressed waste-paper bales which have proved very satisfactory under test. The contractors for the shelters were Messrs. Wm. King & Sons, Ltd., Watford, Herts.

WATER UNDERTAKINGS BILL

THE Water Undertakings Bill prepared by the Central Advisory Water Committee is aimed at consolidating and amending a number of enactments relating to water undertakings; and to that end proposes the repeal of the whole of the Waterworks Clauses Acts of 1847 and 1863, the Gas and Water Works Facilities Acts of 1870 and 1873 (in so far as they relate to water), the Water Companies (Regulation of Powers) Act, 1887, the Water Undertakings (Modification of Charges) Act, 1921, and the Supply of Water in Bulk Act, 1934, etc. The First Schedule to the appendix contains provisions which, should the Bill become law, are to be incorporated in future Acts and Orders relating to water undertakings generally, and these provisions will replace the sections of the 1847 and 1863 Acts mentioned above, which were incorporated in the Public Health Act, 1936. For that purpose Section 120 of the Public Health Act, 1936, is to be replaced by a new section contained in the Second Schedule to the new Bill. It contains enabling provisions for a local authority to supply water, the laying and maintenance of supply and communication pipes, the prevention of waste and pollution, etc. The same Schedule contains a section which is to be substituted for Section 279 of the Act of 1936, relating to general provisions as to breaking open streets for constructing, laying or maintaining sewers, drains or pipes, etc.

Generally, in regard to the Bill, it is provided that the Minister of Health can make orders authorising the establishment of, and facilitating co-operation between, water undertakings. Further matters treated in the Bill concern agreements for the supply of water in bulk (Clause 2), and power is given to the Minister to authorise certain statutory water undertakers to supply premises outside their limits of supply (Clause 3). Application is to be made by those undertakers and the consent of the local authority within whose district the area is situated is to be necessary. Under Clause 4, local authorities can give guarantees to statutory water undertakers, in cases where the aggregate amount of the water rates payable annually by owners and occupiers of premises will not be less than a prescribed fraction of the costs to be incurred by the undertakers.

Rules are laid down by Clause 5 as to the liability for, and recovery of, water rates, and by Clause 6 notice must be given to the local authority of the water supply to an inhabited house being cut off. Power is given to the Minister of Health to revise water rates and water charges (Clause 7). In Clause 8 are contained general provisions in regard to the protection of water from pollution, prohibition being made against bathing or paddling in a stream or reservoir belonging to any statutory water undertakers, washing clothes or other materials or throwing any animal or the carcase of any animal into the same.

Of the remainder of the Bill the following clauses only need be mentioned as likely to be of interest to our readers. Clause 12 provides for the temporary discharge of water into streams while undertakers are carrying out the construction, alteration or repair, etc., of reservoirs and pipes. By Clause 13, statutory water undertakers can provide offices and houses for their employees.

It will be gathered on a perusal of the Bill that many clauses of the Bill are based upon special Act provisions.

It follows that, when the Bill becomes an Act, there will be a much-needed uniformity in the future with regard to legislation affecting water undertakers. In regard to the provisions of the Schedules, though many replace those of the 1847 and 1863 Acts, many are new and others are based upon the Public Health Act, 1936.

It is to be noted that an important definition is given in the Bill of "a supply of water for domestic purposes." It means a sufficient supply for drinking, washing, cooking and sanitary purposes, but not for any bath having a capacity (measured to the centre line of the overflow pipe, or in such other manner as the Minister may by regulation prescribe) in excess of 50 gallons; and includes (*a*) a supply for the purposes of a profession carried on in any premises, the greater part whereof is used as a house; and (*b*) when the water is drawn from a tap inside a house and no hosepipe apparatus is used, a supply for watering a garden, for horses kept for private use, and for washing vehicles so kept, provided that it does not include a supply of water for the business of a laundry or a business of preparing food or beverages for consumption otherwise than on the premises.

EMERGENCY INQUIRY BUREAU

Questions from readers arising out of War-time difficulties and recent Emergency legislation will be answered by a special staff of contributors. Questions, which should be addressed to the Editor, should be accompanied by a stamped and addressed envelope.

Materials and Price Increase.

SIR,—*Can you tell me what is the custom in the trade in regard to charging a percentage on future invoices in respect of goods delivered from stock to cover the compulsory Government war risk insurance and civil defence? It seems to me unfair that, say, 5 or 6 per cent. should be added to each invoice irrespective of the number of times that stock turns over in the course of a year.*

COUNTRY MERCHANT.

No comprehensive policy has been adopted by the trade, but at least one of the more important merchants' associations has advised its members that the view is held by the Board of Trade that an increase of 5 per cent. on the price of goods delivered from stock to cover war risk insurance is greater than would be justified. It would be inequitable, it is stated, that business undertakings should seek, by means of passing on to the customer the whole cost of protecting their property and workpeople, to avoid their share of the common burden. The association in question does not recommend any general percentage increase on invoices except where manufacturers' price advances are concerned.

Compensation for Acquired Land.

SIR,—*Under the Emergency Powers (Defence) Act, 1939, and the Defence Regulations, 1939, a competent authority has power to take possession of land, if it is necessary or expedient so to do, in the interests of the public safety, etc. What provision is made for compensation, and how is it claimed?* H. W.

By the Compensation (Defence) Act, 1939, an Act which is a corollary to the Emergency Powers (Defence) Act, 1939, and the Defence Regulations, 1939, compensation is payable in cases where, after August 24, 1939, in the exercise of emergency powers, possession is taken of land (which includes houses and buildings) or any property other than land. The assumption is that the occupation of the land will be temporary, and the compensation payable is based on the aggregate of the following amounts:—

(1) The rent which might reasonably be expected to be paid under a lease granted for the period of the occupation on the assumption that the tenant paid all usual tenants' rates and taxes, repairs, insurances and other expenses necessary to maintain the rent.

(2) The cost of making good any damage to the land which occurs during the occupation, and has not been made good—no account being taken of fair wear and tear, or of damage caused by war operations.

(3) If the land is agricultural, a sum which might reasonably have been expected to be payable, in addition to rent, by an incoming tenant for tenant-right.

(4) The reasonable expenses of complying with any directions given on behalf of the Crown in connection with the taking of possession.

In general, no account is to be taken of any appreciation in values due to the emergency; and no claim for compensation is valid unless made within six months, or such longer period as the Treasury, either generally or in relation to any particular claim, may allow.

Compensation carries interest at not more than 5 per cent. from the date on which it accrues due, until payment. The actual rate is presented by the Treasury.

In default of agreement, disputes as to whether compensation is payable or as to the amount of any compensation which is payable are to be settled by tribunals.

By the Compensation (Defence) Notice of Claim Rules of September 27, 1939, claims for compensation or for apportionment of compensation under the Compensation (Defence) Act, 1939, must be made, by *notice*, on the specified forms. For instance, Form 1 is for the taking of possession of land and/or buildings.

Form 2, the making good damage in respect of the taking possession of land and/or buildings.

Form 3 is for a claim by an occupier of land in respect of the doing of work on land and/or buildings, etc.

Overtime Rates.

SIR,—*What are the official rates of overtime in force at the moment, including Saturday afternoon and Sunday time?* W. P. W.

The official rates for overtime at the moment are as follows:—

First five days of the week, first two hours, time-and-a-quarter; second two hours, time-and-a-half; afterwards, until starting time next morning, double time. Thereafter, if work by the same men continues without a break, meal times excepted, double time.

Time worked between leaving-off time on Saturdays and 4 p.m., time-and-a-half; afterwards, until starting time on Monday morning, double time.

A.R.P. SHELTER LIGHTING

A BRITISH STANDARD SPECIFICATION

SHELTERS FOR 50 PERSONS (210 sq. ft.) OR MULTIPLES THEREOF UP TO 200 PERSONS

THE following Standard (BS/ARP 6. August, 1939) forms one of a series of specifications prepared by the B.S.I. at the request of the Air Raid Precautions Department of the Home Office.

Note.—This specification gives the general requirements for a shelter accommodating up to 50 persons. Larger shelters, accommodating up to 200 persons, can be similarly equipped by the installation of multiples of this equipment on a *pro rata* basis. The equipment for shelters accommodating 250 persons and upwards is dealt with in Specification BS/ARP 17.

PART 1. WHERE NO MAIN SUPPLY IS AVAILABLE.

Note.—When the conditions of this specification are followed, and the battery is in a fully charged condition, the duration of lighting will be approximately

(*a*) 18 hours at full light (four lamps) or

(*b*) 12 hours at full light (four lamps) and a further 12 hours at half light (two lamps).

Arrangements must be made for the battery to be recharged, at a charging station or garage equipped with charging facilities, immediately after use in order that it may always be available in a fully charged condition. Provision is made for two batteries, in order that one may always be available whilst the other is away on charge.

The electric supply available from the battery is not sufficient to operate a fan. If required, a manually-operated fan should be provided.

1. GENERAL.—The installation shall comply with the Regulations for the Electrical Equipment of Buildings (issued by the Institution of Electrical Engineers), where applicable.

2. VOLTAGE.—The lighting voltage shall be 12 volts.

3. LIGHTING POINTS.—Five lighting points shall be provided, four for use with fixed lamps and one for use with a portable lamp in accordance with Clause 8.

At each point shall be fixed a normal bayonet (B 22) batten lampholder of the insulated type, complying with B.S. 52.

The five points shall be wired in two circuits of two points and three points each, respectively. Each circuit shall be fused with a single-pole fuse.

The points shall be reasonably equally distributed over the area, the points on each circuit being placed alternately.

One of the points shall be placed conveniently for lighting the portion of the shelter allocated for sanitary purposes.

Special precaution shall be taken to ensure that no light is emitted from any external openings in the shelter.

4. SWITCHES.—A single-pole switch shall be provided in each of the two lighting circuits.

Note.—This enables the warden, where the conditions are suitable, to halve the lighting and so conserve the battery.

The switches shall be placed at the main entrance unless otherwise specified.

Note.—A diagram showing the desired position of the switches shall be supplied when necessary.

5. BATTERIES.—The batteries shall be of the lead-acid or of the alkaline type. Two batteries shall be provided for each shelter.

Each battery shall be fitted with convenient means for lifting and carrying. The terminals shall be suitable for the easy connection of the cables by means of screw and wing nut or knurled finger nut. They shall be clearly marked + and − and shall be coloured red and blue, respectively.

(*a*) LEAD-ACID BATTERIES.—Each battery shall be a 12-volt accumulator of the lead-acid type, sealed in an ebonite or composition case. It shall have a capacity of not less than 55 ampere-hours at the 20-hour rate of discharge.

The battery shall be supplied dry charged, and the requisite electrolyte, of the correct specific gravity, shall be supplied in a separate container with a suitable filler. One bulb hydrometer shall be provided.

(*b*) ALKALINE BATTERIES.—Each battery shall be a 12-volt accumulator of the alkaline type, in steel containers, mounted in hard wood crates or other approved containers suitable for carrying, filled ready with the electrolyte and fully charged. It shall have a capacity of not less than 55 ampere-hours at the 20-hour rate of discharge.

6. WIRING.—All circuits, including switchboard and battery connections, shall be wired with 3/.036 tough rubber-sheathed twin cable complying with B.S. 7.

The wiring shall be run on cleats securely fastened to walls and ceilings.

Note.—Where the conditions available for fixing render it necessary, a conduit system may be used.

The cables shall terminate in suitable thimbles for connection to the battery, the diameter of the hole in the thimble being $\frac{3}{8}$ in. The ends of the cables shall be coloured red and blue, the switch and fuse lead being that coloured red.

7. LAMPS.—The lamps shall be bus-lamps rated at 12-volts, 10 watts, and shall be fitted with B.22 caps.

8. PORTABLE HAND-LAMP.—A portable hand-lamp shall be provided, the lamp being protected by a wire guard and fitted with a reflector. The lamp shall be wired with four yards of 40/.0076 tough rubber-sheathed flexible wire connected to a lampholder plug. The lamp shall comply with Clause 7.

9. SPARE EQUIPMENT.—The following spare equipment shall be provided:—

Nine lamps.

Six cartridge fuses or equivalent fuse wire.

Two large spring connection clips. (To facilitate connections when, in the event of both batteries becoming discharged without immediate facilities for recharging, an ordinary automobile battery might be pressed into service.)

10. EMERGENCY HAND-LAMP.—A self-contained hand-lamp (primary cell or accumulator) complying with the requirements of Specification B.S./A.R.P. 3, shall be provided in each shelter, for the use of the warden.

11. CASE.—A case of wood or other approved material shall be provided, conveniently sub-divided to contain the two batteries, a supply of battery acid (if the battery is of the lead-acid type), and the other spares required by Clause 9.

The case shall be so constructed as to be suitable for use as a seat and should be not less than 18 in. nor more than 26 in. high.

It shall be fitted with a brass lock. Two keys shall be provided, one of which shall be fitted behind a glass panel mounted on the case.

Provision shall be made to hold the instruction sheet (see Clause 12) on the inside of the lid.

The battery and acid storage compartments shall be painted with acid-resisting paint.

The cable leads shall enter from the back and shall be so arranged as to permit of easy connection to either battery.

Note.—The acid bottles, lamps, and any other fragile equipment shall be suitably packed as a protection against shocks in transport.

A sketch of a suitable design is appended.

12. INSTRUCTION SHEET.—An instruction sheet, mounted on a varnished card, shall be supplied. This shall contain:—

(*a*) Instructions for the filling, use and maintenance of the battery, emphasising the need for recharging immediately after use.

(*b*) Instructions for replacing fuses.

(*c*) Description of lamps (for ordering additional supplies).

(*d*) Directions to the warden calling attention to the desirability (in order to conserve the charge in the battery) of reducing the lighting by switching off one circuit when the persons using the shelter have taken their places and the extra light is not needed.

(*e*) A space shall be provided in which may be written the address of the battery charging station.

PART 2. WHERE MAIN SUPPLY IS AVAILABLE.

Note.—The installation covered by this specification is used for both normal and emergency lighting.

Whilst the main supply is available, more light is provided than in the case of the installation covered by Part 1, but when the mains supply fails the lighting is from the battery, as in Part 1, and of the same amount as provided in that specification.

If the conditions of this specification are followed, and the battery is in a fully charged condition, the duration of emergency lighting (without main supply) will be approximately

(*a*) 18 hours at full light (four lamps), or

(*b*) 12 hours at full light (four lamps) and a further 12 hours at half light (two lamps).

Provision is made for alternative equipments, namely, with, and without, a battery charger.

If a battery charger is not fitted, arrangements must be made for the battery to be recharged at a charging station or garage equipped with charging facilities, immediately after use in order that it may always be available in a fully charged condition. In this case, provision is made for two batteries, in order that one may always be available whilst the other is away on charge.

Provision is made for a fan operating on the main supply.

The electric supply available from the battery is not sufficient to operate a fan. If required, a manually-operated fan should be provided.

1. INFORMATION TO BE SUPPLIED WITH INQUIRY ORDER.

(*a*) Name and address of Electricity Supply Authority.

(*b*) Voltage of the main supply, and whether A.C. or D.C.

(*c*) Location of the nearest point for connection to the main supply.

(*d*) Whether all the apparatus is to be mounted on one switchboard as one unit. (See Clause 8.)

(*e*) If not, state where the mains switch fuse and meter are to be placed, and where the control switches for the lighting are to be placed.

(*f*) A drawing showing dimensions of shelter, the desired position of the lights and switches, and location of equipment.

(*g*) If a fan is to be supplied. (See Clause 15.)

(*h*) If a battery charger is to be supplied. (See Clause 16.)

2. GENERAL.—The installation shall comply with the Regulations for the Electrical Equipment of Buildings (issued by the Institution of Electrical Engineers), where applicable.

3. VOLTAGE.—The lighting voltage shall be 12 volts.

4. LIGHTING POINTS.—Ten lighting points shall be provided, nine for use with fixed lamps and one for use with a portable lamp in accordance with Clause 12.

At each point shall be fixed a normal bayonet (B 22) batten lampholder of the insulated type, complying with B.S. 52.

One point shall be fixed on or over the switchboard and shall be connected direct to the battery through its own switch and single-pole fuse. (This lamp serves to light the switchboard and indicate that the battery is in order.)

The remaining nine points shall be wired in two main circuits of five points and four points, respectively. Under normal conditions both of these main circuits will be connected to the mains through the transformer. A change-over switch shall be provided, which, in the event of the failure of the main supply, may be used to connect the circuit of five points to the battery.

The circuit of four points shall be subdivided into two circuits of two points each, each sub-circuit being fused with a single-pole fuse.

The circuit of five points shall be subdivided into two circuits of two points and three points each, respectively, each sub-circuit being fused with a single-pole fuse. The sub-circuit of three points shall be for two fixed lamps and for the point for the portable lamp. One of the points in this main circuit of five points shall be placed conveniently for lighting the portion of the shelter allocated for sanitary purposes.

The points shall be reasonably equally distributed over the area, the points on each circuit being placed alternately.

Special precaution shall be taken to ensure that no light is emitted from any external openings in the shelter.

5. SWITCHES.—One single-pole switch shall be provided in the circuit of four points, one for the lamp over the switchboard, and one single-pole switch in each of the sub-circuits of the circuit of five points.

Note.—These latter two switches enable the warden, where the conditions are suitable, to halve the emergency lighting and so conserve the battery.

The switches, except that for the lamp over the switchboard, shall be placed at the main entrance unless otherwise specified.

6. BATTERIES.—The batteries shall be of the lead-acid or of the alkaline type. Two batteries shall be provided for each shelter.

Note.—In cases where the shelter is to be equipped with a mains battery charger capable of recharging the battery, one battery only need be provided.

Each battery shall be fitted with convenient means for lifting and carrying. The terminals shall be suitable for the easy connection of the cables by means of screw and wing nut or knurled finger nut. They shall be clearly marked + and − and shall be coloured red and blue. respectively.

(*a*) Lead-acid Batteries.—Each battery shall be a 12-volt accumulator of the lead-acid type, sealed in an ebonite or composition case. Where a battery charger is provided the battery may be in a sealed glass case. It shall have a capacity of not less than 55 ampere hours at the 20-hour rate of discharge.

The battery shall be supplied dry charged, and the requisite quantity of electrolyte, of the correct specific gravity, shall be supplied in a separate container with a suitable filler. One bulb hydrometer shall be provided.

(*b*) Alkaline Batteries.—Each battery shall be a 12-volt accumulator of the alkaline type, in steel containers, mounted in hard wood crates or other approved containers suitable for carrying, filled ready with the electrolyte and fully charged. It shall have a capacity of not less than 55 ampere hours at the 20-hour rate of discharge.

7. TRANSFORMER.—The transformer shall be double-wound and shall comply with B.S. 794. It shall be rated at 250 volt-amperes and shall have an output voltage of 12 volts.

The input voltage shall be the declared pressure of the supply mains. (See Clause 1.)

A tapping shall be provided on the transformer for use, if required, with the battery charger provided for in Clause 16.

8. SWITCHBOARD.—A switchboard shall be provided consisting of a galvanised angle-iron framework, having suitable means for fixing to the walls of the shelter. Alternatively, separate panels may be used. The following equipment shall be mounted on the switchboard:—

One 10-ampere double-pole switch-fuse in a galvanised iron case.

One transformer. (See Clause 7.)

Two 10-ampere two-way single-pole fuseboards in galvanised iron cases, complying with B.S. 214.

One 10-ampere hand-operated change-over switch in galvanised iron case.

One lampholder, switch and single-pole fuse.

One switch and double-pole fuse for fan (when provided).

One battery charger (when provided).

Space shall be provided on the switchboard for fitting an electricity meter.

9. LABELLING.—The switches shall be clearly labelled as to their use. The labelling shall be as follows:—

Main switch for supply with the words ON and OFF.

Changeover switch with the words NORMAL and EMERGENCY.

The other switches and the fuses shall be labelled appropriately.

10. WIRING.—All circuits, including switchboard and battery connections, shall be wired with 3/.036 tough rubber-sheathed twin cable complying with B.S. 7.

The wiring shall be run on cleats securely fastened to walls and ceilings.

Note.—Where the conditions available for fixing render it necessary, a conduit system may be used.

The cables shall terminate in suitable thimbles for connection to the battery, the diameter of the hole in the thimble being $\frac{3}{8}$ in. The ends of the cables shall be coloured red and blue, the switch and fuse lead being that coloured red.

11. LAMPS.—The lamps shall be bus-lamps rated at 12-volts, 10 watts, and shall be fitted with B. 22 caps.

12. PORTABLE HAND-LAMP.—A portable hand-lamp shall be provided, the lamp being protected by a wire guard and fitted with a reflector. The lamp shall be wired with 4 yds. of 40/.0076 tough rubber-sheathed flexible wire connected to a lampholder plug. The lamp shall comply with Clause 11.

13. SPARE EQUIPMENT.—Unless otherwise specified the following spare equipment shall be provided:—

Nine lamps.

Six spare cartridge fuses or equivalent in spare fuse wire.

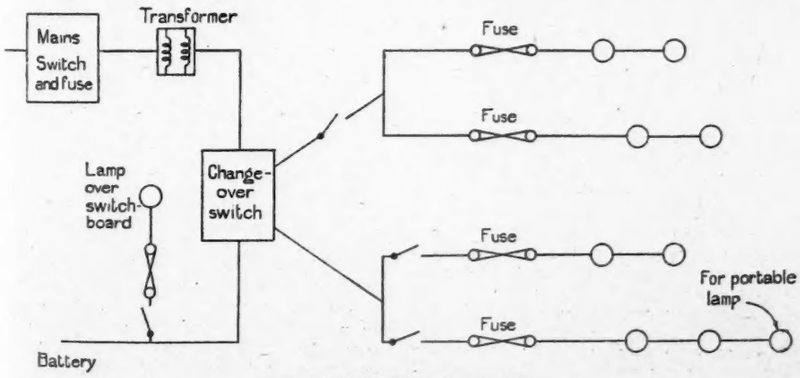
Two large spring connection clips (to facilitate connections when, in the event of the battery or batteries becoming discharged without immediate facilities for recharging, an ordinary automobile battery might be pressed into service.

14. EMERGENCY HAND-LAMP.—A self-contained hand-lamp (primary cell or accumulator) complying with the requirements of Specification B.S./A.R.P. 3 shall be provided in each shelter for the use of the warden.

15. FAN.—When ordered, an electrically driven fan shall be supplied. The fan shall be directly connected to the supply mains through the necessary fuses and switch mounted on the switchboard. The frame of the fan shall be earthed and the wiring shall be in screwed steel conduit.

16. BATTERY CHARGER.—If ordered, a static battery charger shall be supplied for connection to the transformer with the necessary fuses and switches, current regulator and ammeter, and shall be capable of fully charging the 12-volt battery in 10 hours.

17. CASE.—A case of wood or other approved material shall be provided, conveniently sub-divided to contain the



SIMPLIFIED DIAGRAM OF CIRCUIT.

battery or batteries, a supply of battery acid (if the battery is of the lead-acid type), and the other spares required by Clause 9

The case shall be so constructed as to be suitable for use as a seat, and should be not less than 18 in. nor more than 26 in. high.

It shall be fitted with a brass lock. Two keys shall be provided, one of which shall be fitted behind a glass panel mounted on the case.

Provision shall be made to hold the instruction sheet (see Clause 18) on the inside of the lid.

The battery compartments shall be painted with acid-resisting paint.

The cable leads shall enter from the back and shall be so arranged as to permit of easy connection to either battery if two are employed.

The acid bottles, lamps, and any other fragile equipment shall be suitably packed as a protection against shocks in transport.

A sketch of a suitable design is appended.

Note.—When a battery charger is used the case must be placed in a well-ventilated position in the shelter and the lid must be kept open during charging.

18. INSTRUCTION SHEET.—An instruction sheet, mounted on a varnished card, shall be supplied. This shall contain:—

(*a*) Instructions for the filling, use and maintenance of the battery, emphasising the need for recharging immediately after use.

(*b*) Instructions for replacing fuses.

(*c*) Description of lamps (for ordering additional supplies).

(*d*) Directions to the warden calling attention to the desirability, when the main supply has failed (in order to conserve the charge in the battery), of reducing the lighting by switching off one circuit when those using the shelter have taken their places and the extra light is not needed.

(*e*) The necessary instructions for the use of transformer and charger.

(*f*) Any other instruction necessary.

(*g*) A space shall be provided in which may be written the address of the battery charging station.

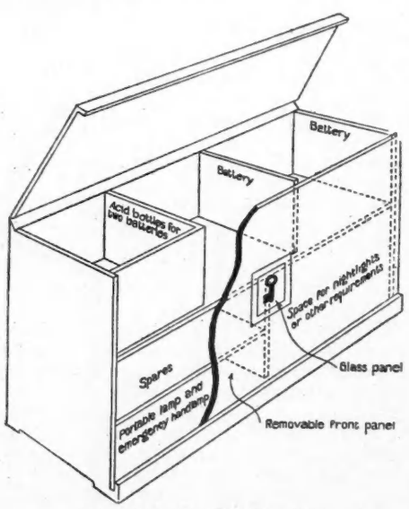


DIAGRAM OF A TYPICAL CASE.

NOTE.—The above diagram is intended to show a typical case. The actual proportions and internal sub-divisions will depend upon the dimensions of the battery or batteries.

The Institution desires to call attention to the fact that this specification is intended to include the technical provisions necessary for the supply of the material herein referred to, but does not purport to comprise all the necessary provisions of a contract. It will be reviewed at an early date, and any comments or suggestions for amendment should be addressed to the Director, British Standards Institution, 28, Victoria-street, London, S.W.1.

THE BUILDING INDUSTRY AND THE WAR

DEPUTATION TO THE MINISTRY OF HEALTH.

MR. WALTER ELLIOT, the Minister of Health, Mr. John Colville, the Secretary of State for Scotland, and Mr. Ralph Assheton, the Parliamentary Secretary to the Ministry of Labour, received on Wednesday last week a deputation from the National Federation of Building Trades Operatives, who were accompanied by representatives of the National Federation of Building Trades Employers.

The deputation urged that the Government should do everything practicable to keep the building industry occupied during the war to the maximum possible extent. They realised that the Government had undertaken a very extensive building programme of its own, but this was concentrated in a relatively small number of areas (other areas such as the Eastern Counties being left with very little at all). Moreover, it would be carried out by methods which would not utilise the services of all crafts, *e.g.*, plasterers, and provided employment mainly for the younger operatives who were willing and able to travel. It was in their view necessary, therefore, that local authorities and private enterprise should continue or resume as circumstances made it possible their normal activities so far as war conditions would permit.

Unless plans were made to keep the industry in active operation, at perhaps a lower tempo than normally, unemployment, with consequent loss of productive power, and the extinction of sources of supplies which had been gradually built up, not without difficulty, would result. Moreover, the necessary pools of labour would not be available for the emergency repair of houses and other essential buildings which might be damaged as the result of air raids.

On these grounds the industry felt that the Minister of Health had been a little too drastic in the circular he had issued early in September asking local authorities in England and Wales to postpone for the time being their work on slum clearance, and to proceed only with the completion of houses already in an advanced stage of construction.

In reply to the deputation, Mr. Elliot said that no industry had helped or co-operated more willingly with the Government than the building industry. He had not issued his circular from choice—no one was more anxious than he to carry on with the demolition of the slums, the abatement of overcrowding, and the provision of the necessary rehousing. But the housing activities of local authorities threw a great burden on officials, both local and central, and these were, in present circumstances, almost overwhelmed by work directly connected with the war. Secondly, the effective prosecution of the war made it necessary to conserve the capital resources of the country, and to restrict the borrowings of local authorities within the narrowest limits. Lastly, direct war work made an immediate demand on available supplies of labour and materials, and the position as regards materials was still difficult.

The whole position was, however, under close and continuous review, and, if he could be supplied with concrete examples of areas where both labour and materials were available, and there was building to be done which could be shown to be in the national interest, he would willingly consider whether it could be authorised to proceed. He had, however, to keep in mind the necessity for having reserves of supplies available for emergency repairs to essential buildings damaged as the result of air attacks.

Mr. Colville explained that conditions in Scotland were not quite the same as in England, and he had in consequence been able to authorise local authorities to proceed to complete all houses already begun.

Mr. Assheton spoke of the machinery set up to determine the priorities of the building programmes of the different Government Departments, and said that the building programmes for which the Government were responsible (in so far as they were able to make predictions) directly or indirectly, during the next six months did not fall far short of the industry's normal productive capacity.

Mr. George Hicks, M.P., in thanking the Ministers for receiving the deputation, expressed the desire of the industry to continue in close co-operation with the Government, and promised to supply further information in support of the industry's representations.

GENERAL POSITION OF THE BUILDING INDUSTRY

"THE effect on the building industries of the outbreak of war in the short run has been disruptive, with a general closing down of much building activity and acceleration of military and civil defence works. From this sudden action the industry may well have suffered in geographical dislocation and hampering of normal work," says the current issue of the Building Industries Survey.

"In the long run, however, the main effect is likely to be an intensification of the pre-war tendencies. It is known that there will be much building work for military and civil defence purposes, and that there is vital need to keep the industry from disintegration, since it represents the only trained body of men capable of dealing with the demolition caused by air raids, of repairing damaged property and of providing structural defence.

"The imponderables of the future position are important, but many of them turn on decisions of public policy. At present there appears to be a blanket restriction of the capital investment activities of local authorities, while private activity is discouraged. But there is every reason why, as soon as the civil defence programmes are completed, and their staffs thus released, local authorities in reception areas should be allowed to resume their programmes and private investment should be encouraged by an official scheme of war risks insurance, though much will depend on the premium.

"The outstanding need for the prosecution of the war is to increase production and to build up the national income and the yield of taxation while bringing our war potential speedily and smoothly to its maximum. In this the building industry, which must in any case be kept together, has a great part to play. Favourable and early decisions on housing policy in reception areas and on war-risks insurance would materially assist the national effort."

UNEMPLOYMENT STATISTICS

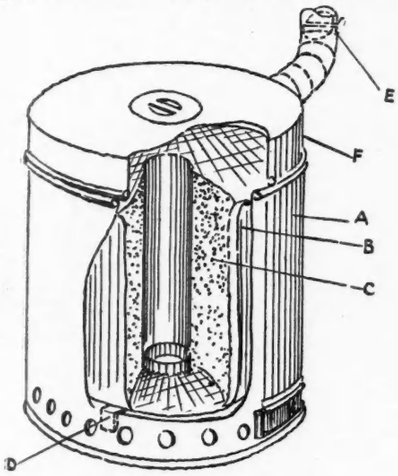
In the building industry (states *The Ministry of Labour Gazette*) the numbers unemployed showed a further decrease between August 14 and September 11, especially in the North-Western Division. There was a fall in unemployment among carpenters, but an increase occurred among painters and plasterers; among other classes of skilled workers there was little change. In the building industry as a whole the percentage unemployed was 9.5 at September 11, 1939, compared with 10.4 at August 14, 1939, and with 14.1 at September 12, 1938.

In brick manufacture the numbers unemployed increased in the Midlands, but elsewhere there was little change as compared with August 14. For the country as a whole the percentage unemployed rose from 6.9 at August 14, 1939, to 7.9 at September 11, 1939; the figure for September 12, 1938, was 9.8.

A SAWDUST-FUEL FURNACE

THE rationing of normal fuels lends interest to the sawdust-fuel furnace here illustrated, which has been designed by Mr. A. J. T. Eyles, who states that very economical results have been obtained with it, not only for cooking purposes in workshop messrooms, but also for the heating and warming of stores and offices.

The construction is shown in the sketch. (A) is the outer shell, made of No. 18 B.G. steel sheet; (B) the firebox or fuel container; (C) sawdust; (D) angle-iron supports; (E) damper. A number of 1-in. diameter air inlet holes are cut around the furnace bottom; there is also a rectangular hole for lighting purposes. A sliding regulator, fitted over the



A SAWDUST-FUEL FURNACE.

aperture, is required at times to regulate the air supply. As close as possible to the top of furnace a hole is required for an outlet to carry off the gases and fumes.

To fill the firebox, a closely fitting round wooden plug is first inserted in the centre; sawdust is then filled in and pressed down with a wooden rammer. The more the sawdust is rammed the longer the fuel will burn. The firebox is then placed in the outer shell and the plug withdrawn, preferably after the cover (F) has been placed in position.

The sawdust is ignited by a lighter, which may be made of $\frac{1}{16}$-in. diameter steel wire, with some asbestos fixed in at one end, and of sufficient length to reach the centre of the natural flue of sawdust. The asbestos should first be dipped in paraffin. If the sawdust is very dry it will ignite with paper only.

Sawdust-fuel furnaces of this type can be made in sizes ranging from 12 in. to 20 in. in diameter.

The inventor informs us that he has also designed a sawdust-fuel furnace for heating soldering tools in a large factory. Prior to its adoption, coal, gas and electrical appliances were used, but these have now been discarded, an adequate supply of sawmill waste products being available and providing a more economical fuel.

NEW CINEMA

NEWCASTLE-UNDER-LYME.—Mr. R. Satchwell, 6, New-street, Birmingham, has prepared plans for the erection of a cinema in Bridge-street.

PUBLIC WORKS

INVERNESS-SHIRE.—The C.C. is to carry on with the construction of the Atlantic bridge at South Ford, Benbecula. The Property and Works Committee decided that the proposed £11,000 R.C. school at Inverness should proceed if there is enough material available to complete it in reasonable time.

NEW BUILDINGS IN LONDON

COULSDON. — BUILDING. — Mr. Julian Leathart, F.R.I.B.A., 39, Gordon-square, W.C.1, has submitted a preliminary layout for new dormitories, lavatories and classrooms, off Dean-lane, to the U.D.C.

CROYDON. — ADDITIONS. — Messrs. Ind Coope and Allsopp, Ltd., Victoria House, Vernon-place, W.C.1, have had plans approved by the C.B. for alterations and additions to the "Croham Arms" public-house at the corner of St. Peter's-road and Croham-road.

CROYDON.—HOME.—The C.B. has accepted a tender at £15,616, subject to the approval of the Ministry of Health, for a nurses' home on the north side of the maternity block at the Mayday hospital.

HARMONDSWORTH. — FACTORY.—Large new factory premises are to be erected on a site in the Great West-road for Messrs. Block and Decker, Ltd., Slough. Mr. E. A. J. Koch, 64, Victoria-street, Westminster, S.W.1, is the architect and consulting engineer, and the contract has been placed with Messrs. W. S. Try, Ltd., High-street, Cowley, Uxbridge.

ORPINGTON.—FIRE STATION.—Mr. V. R. Stotesbury, 59a, Evelyn-street, Deptford, S.E.8, has secured the contract for a fire station and cottages at Biggin Hill, at £5,013. Messrs. L. A. Culliford and Partners, 47, Essex-street, W.C.2, are the architects, and work has just commenced.

POPLAR. — GENERATING STATION. — The B.C. recommend that the preparation of the scheme by Mr. John Bruce, A.M.I.E.E., 158, Windsor House, Victoria-street, S.W.1, for the erection of an electricity generating station be proceeded with.

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PURLEY.—SERVICE STATION.—Mr. W. A. Cessford Ball, Grantham House, Putney Heath, S.W.15, is the architect for the reconstruction of the service station in the High-street.

SELSDON.—SHOWROOM.—Plans have been submitted by Mr. Albert Frampton, Bromley Hill Estate Office, Bromley, for a motor showroom and workships in Selsdon-crescent.

SOUTHGATE.—REBUILDING.—And extension are to be made to a section of the hostel at Hollybush Lodge, Avenue-road, for the Church Army, 55, Bryanston-street, W.1 Messrs. Hastie, Winch and Kelly, FF.R.I.B.A., 10, Henrietta-place, W.1, are the architects.

NEWS ITEMS

Ventilation of Air Raid Shelters.

A full and interesting report on the ventilation of Air Raid Shelters is published in the current issue of the Journal of the Air Raid Protection Institute. The report has been prepared by the Shelters and Buildings Panel of the Institute.

Institute of Builders Examinations.

The Secretary of the Institute of Builders states that it is proposed to continue to offer the Institute's membership examinations in the hope that conditions will allow them to be held in 1940.

The late Mr. Thomas E. Halliday.

We regret to record the death, on October 15, of Mr. Thomas E. Halliday, of Messrs. Halliday Boilers, Ltd. The funeral was held at St. Mary's Church, Bishopstoke, near Eastleigh, Hants, on October 20.

A Building Society's Progress.

We are informed that the total amount loaned by the Halifax Building Society on new mortgages between the outbreak of war and October 7 exceeded £750,000. "The Directors," it is stated, "realise that under war conditions some inconvenience is being caused to applicants for new mortgage loans, but they are satisfied that, while conditions generally (and more particularly conditions arising out of emergency legislation) are still so uncertain, they are adopting the right policy."

Battersea Polytechnic Industrial Metallurgy Classes.

The head of the Department of Metallurgy, Battersea Polytechnic, Battersea Park-road, S.W.11, calls attention to a course of lectures specially arranged to meet the needs of (i) technical representatives, (ii) salesmen, (iii) inspection officers, and (iv) all those working, machining, or otherwise dealing with metallic articles. The course of 24 lectures, which began on October 17, includes: Metallurgical terms; manufacture and properties of industrial metals and alloys; wrought iron, cast iron, malleablized iron, steel; industrial fabrication processes, founding, stamping, rolling, extrusion. Defects in metals; corrosion, industrial pyrometry; mechanical testing, specifications, galvanising, and electro-deposition; heat treatment of carbon and alloy steels.

Scottish Contracts and the War.

At a meeting of the Aberdeen Town Council on October 17, the Finance Committee reported consideration of the question of the policy to be adopted in cases where contractors demurred to the execution of contracts concluded before the outbreak of war on the terms and conditions specified on the plea of change of circumstances. The Committee recommended, and the Council approved, that (1) the contractors in all such cases be notified that the Council insisted that the contracts be executed, but undertook to give effect to any general principle regarding the effect of the war on such contracts laid down by legislation, Orders in Council, or decisions of the Courts; and (2), in the event of any contractor after such notification refusing to execute his contract, the Town Clerk be instructed to take such action in the matter, whether by legal proceedings or otherwise, as might be appropriate and as the Council might approve.

A.R.P. SCHEMES

ADWICK-LE-STREET.—The U.D.C. proposes air raid shelters at 20 sites, at £5,000.

ASHTON - UNDER - LYNE. — Messrs. Hughes Bros. (Derbyshire Granite), Ltd., Waterswallows Quarry, Buxton, are to supply 30 air raid shelters at council schools for the E.C.

ATHERTON.—The E.C. proposes 13 air raid shelters at council schools.

BERMONDSEY.—The B.C. has received formal consent from the M.H. to the borrowing of £8,256 for the purposes of air raid precautions, and £4,289 for decontamination centres and accommodation for air raid precaution services at depots. The Council has approved plans for an air raid shelter at Normandy Wharf, Rotherhithe-street, for Messrs. Quirk, Barton and Co., Ltd.

BOOTLE.—The T.C. proposes communal shelters.

BRADFORD.—The E.C. propose trench shelters for various schools, at £190,000.

CARDONALD.—Plan prepared for shelters at Cochrans Engineering Works. Mr. J. Thomson King, architect, Central Station-buildings, Union-street, Glasgow, and Mr. George Eadie, of Glasgow, contractor.

CONISBOROUGH.—The U.D.C. is to erect 120 communal type air raid shelters to accommodate 1,253 in Balby-street and Firbeck-street areas, at £10,800; 60 single type shelters to accommodate 360 persons and 130 double type to accommodate 1,560 persons at Tickhill-square and Cliff View, at £5,835.

DARLINGTON.—Air raid shelter, ambulance room, mess room and lockers are to be erected for the Darlington Forge, Ltd., by Messrs. W. Sanders Hutton, Ltd., Post House Wynd, Darlington.

DROYLSDEN.—Messrs. Forshaws, Ltd., 17, Greenfold Abbey Hey, Gorton, Manchester, are to erect air raid shelters in Sunnyside-road and Greenside-road for the U.D.C.

DUKINFIELD.—The T.C. has approved plans for conversion of Town-lane technical school into first-aid casualty station.

ERITH.—The T.C. has approved plans for an air raid shelter at 108, Bedonwell-road, for Mr. R. V. Newman.

EAST HAM.—C.B. has placed the following contracts: Clemens Bros., Ltd., wardens' posts, adaptation and strengthening of basements and cellars, and erection of cleansing station, sewage works; H. C. Horswill, Ltd., wardens' posts; W. J. Jerram, basement shelters; J. and R. Rooff, Ltd., wardens' posts; Stokes and Sons, Ltd., basement shelters; basement public shelters, Herapath Bros., Joseph (Builders), Ltd., J. R. Rooff, Ltd., J. Stokes and Sons, Ltd., and A. Webb; Girling Ferro Concrete Co., 20 Girling shelters; Buildings Estates, Ltd. (Woodford Wells), surface shelters; Clemens Bros., surface shelters, North Woolwich and Cyprus; W. J. Clemens, surface shelters, Little Ilford and North Woolwich; J. R. Rooff, Ltd., cleansing station, Church-road; T. G. Waterman, Ltd., mortuaries, Manor Park and City of London Cemeteries.

FINSBURY.—The B.C. recommend the construction of further shelters in various parts of the borough, at £35,153; additions to Pine-street and Bath-street shelters, at £3,105.

FINSBURY.—The B.C. recommend the adaptation or construction of shelters at £112,913 and £30,000. For the proposed surface shelters, of which Mr. Falkiner Nuttall is the architect, the scheme is as follows: Wynford Houses for 50 persons, at £200; Penton Residences for 50, at £200; Mandeville Houses (site) for 350, at £1,400.

GATESHEAD.—Plans have been approved for air raid shelters for Messrs. Snowball, Son and Co., Bailey Chare; Laws Stores, Hawks-road; J. Wilkinson and Sons; and Littlewoods Stores, High-street.

GLASGOW.—Shelters are to be built at Robertson-street from plans by Messrs. Weddle and Inglis, architects, 216, Bath-street, Blythswood; shelters for business premises and offices in Bridge-street, Messrs. Lincoln, MacWhannell and Reid, architects, 227, West Regent-street, Blythswood; shelters for Gordon-street buildings offices, Messrs. Watson, Salmond and Gray, architects, Central Station-buildings, Union-street, Mr. T. Wallace, of Glasgow, contractor.

GREENOCK.—Plans prepared for shelters for St. Lawrence Girls' and Boys' schools. Mr. Donald Murray, 7, Gilmour-street, Paisley, is the architect for shelters at The Orchard Sugar Refinery site. Mr. Robert Millar, Hamilton-street, is the architect for shelters at Greenock Esplanade; Carlstown Sugar Refinery site; Dunlop-street-Invertrip-road site, and at the Broomhill district.

GREENOCK.—The T.C. has decided to proceed immediately with an air raid precautions party depot at the junction of Madeira and Finnart-streets.

HEMSWORTH.—The R.D.C. to prepare plans for 96 shelters.

HENDON.—The T.C. has accepted the tender of Messrs. Lavender, McMillan, Ltd., of Worcester Park, for constructing 147 trench units for the Northern Section, at £38,057. A further contract is to be let for constructing 77 additional shelters, at £258 17s. 10d. each.

HESTON.—A cleansing station is now being constructed in New Heston-road for the T.C. The contract has been placed with Messrs. D.S.M. Estates, Ltd., 646, London-road, Isleworth, and not as stated in our last issue.

HOVE.—An A.R.P. station and flats are to be erected at the fire station in Hove-street for the T.C. The plans are by the Borough Surveyor and the contract has been placed with Messrs. H. J. Paris, Ltd., "Shangri-La," Holmes-avenue, Hove, 4, at £2,785.

HYDE.—The E.C. is to seek £8,600 loan sanction for air raid shelters to council schools. The Council is to proceed with a public air raid shelter.

JARROW.—T.C. has adopted scheme for the provision of basement shelters for 16,000 people. The Council are to convert the old Jarrow post office into a report centre. The Primrose Hospital is to be extended and cleansing stations and decontamination stations erected. Mr. J. Scott Weir, Borough Engineer, is architect.

LUTON.—Plans for large basement building at Technical College approved by Governors for submission to County E.C. The cost of making the basement suitable for air raid shelter would be between £3,000 and £4,000.

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Usual Merchants .....

Address .....

MANCHESTER.—Messrs. D. Walton and Co., Ltd., Clarendon-road, Salford, 5, are to construct an air raid shelter in River-street and Short-street, Hulme, for Messrs. Hanover Mills, Ltd., Buxton-street. Mr. B. Pendleton, 16, Deansgate, is the architect.

MIDDLESBROUGH.—T.C. approved warehouse extension and A.R.P. shelter, Fleetham-street, Pybus Bros.; A.R.P. shelters, at Zetland Chambers, School Croft, for Messrs. Livingstone and Sons, Ltd.

NELSON.—The T.C. proposes 24 public shelters with accommodation for 4,000 persons.

NEWCASTLE-ON-TYNE.—Shelters are to be constructed at the premises of Messrs. Malcolm Christie, Charlotte-square. The architects are Messrs. Stephenson and Gillis, Savill-chambers. Contract not let. A contract for a shelter underneath Milburn House, block of buildings, has been let to Messrs. J. R. Rutherford and Sons, Minories Joinery-works, Newcastle. The architect is Mr. C. S. Errington, 46, Grainger-street.

NORTHANTS.—The C.C. proposes 36 air raid shelters to council schools at Corby, and underground shelter at Kettering secondary schools, at £10,000.

NUNEATON.—The T.C. proposes shelters and trenches and the conversion of basements to provide accommodation for 5,725 people.

PORTSMOUTH.—The T.C. has approved plans by Messrs. S. Salter, Ltd., for the A.R.P. Committee for control centre, next to the police station in Fratton-road, and the City Engineer (Works Dept.), for A.R.P. Committee for control centre, next to the police station, in Windsor-road, Cosham; Messrs. Tanner Bros., builders, for Messrs. E. C. Allen, Ltd., shelter, in Common-street, Landport.

PURLEY.—Messrs. Rickett, Cockerell and Co., Ltd., are proposing to erect air raid shelters on land rented from the railway company adjoining Purley station.

REIGATE.—The T.C. has approved an air raid shelter in Clarendon-road, Redhill, for the South Suburban Co-operative Wholesale Society, Ltd.

SALFORD.—Messrs. J. Gerrard and Sons, Ltd., Pendlebury-road, Swinton, Manchester, are to erect air raid shelters for 500 persons at the Salford Brow estate for the Salford Housing, Ltd., Chapel Walks, Manchester. Messrs. Halliday and Agate, 14, John Dalton-street, Manchester, are the architects.

SCARBOROUGH.—The T.C. is to obtain tenders for air raid shelters for various schools. Plans are by Mr. H. V. Overfield, Borough Engineer.

SEDGEFIELD.—The R.D.C. propose to construct shelters for 2,750 people.

SHEFFIELD.—T.C. approved plans for air raid shelters: At Cadman-street, for Hy. Outram and Sons, Ltd.; at Ouse-road, for C. and J. Hampton, Ltd.; at Beulah-road, for J. Lyons and Co., Ltd., London. The E.C. proposes shelters in secondary and primary schools, at £87,000.

SHROPSHIRE.—The E.C. has approved £17,850 for shelters at council schools.

SOLIHULL.—The U.D.C. propose 24 additional public shelters.

SPENBOROUGH.—The U.D.C. is to seek £12,000 loan sanction for shelters at schools.

STOCKTON.—The T.C. is to construct shelters for about 7,000 people. Mr. J. Knowles is the Borough Engineer.

SUNDERLAND.—A scheme has been approved to construct shelters at schools, at £20,000.

THORNABY-ON-TEES.—The T.C. is to construct shelters in the town.

TYNEMOUTH.—The T.C. have been recommended to approve £23,000 for construction of trenches, shelters and for the protection of schoolchildren, £20,570 for public trenches, Anderson shelters and communal basements, £10,014 for the protection of buildings, and another £2,438 for first-aid stations.

TYNEMOUTH.—The T.C. is to start work on 74 pill-box shelters and 3,000 ft. of trenches for school children.

WOMBWELL.—The West Riding C.C. propose cleansing station in Market-place.

WORCESTERSHIRE.—The E.C. is to seek approval for a further expenditure of £14,260 for additional air raid shelters at council schools.

YORK.—Messrs. Sorrell (York), Ltd., Osbaldwick-lane, York, are to erect, at £26 12s. 10d., per pair, 700 domestic surface type air raid shelters for the T.C.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary. The dates at the head of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained. Abbreviations: (A) for A.R.I.B.A.; B. of E. for Board of Education; B.C. for Borough Council; B.E. for Borough Engineer; B.S. for Borough Surveyor; C. for Clerk; C.B. for County Borough; C.C. for County Council; C.E. for County Engineer; C.S. for County Surveyor; D.S. for District Surveyor; E. for Engineer; E.C. for Education Committee; (F.) for F.R.I.B.A.; (L.) for L.R.I.B.A; M.W.B. for Metropolitan Water Board; M.H. for Ministry of Health; M.T. for Ministry of Transport; P.C. for Parish Council; R.D.C. for Rural District Council; S. for Surveyor; T.C. for Town Clerk and Town Council; and U.D.C. for Urban District Council.

BUILDING.

OCTOBER 30.

Brentford and Chiswick T.C.—Cleansing stations and accommodation for personnel at River depot, Corney-rd., Chiswick, and Town Meadow depot, High-st., Brentford. L. A. Cooper (L.), B.E. and S. Dep. £2 2s.

Thornton Cleveleys U.D.C.—Commercial air raid shelters. H. Fenton, E. and S.

OCTOBER 31.

Killarney. — Alterations to house at Mahony's Point for Golf Club, Ltd. B. O'Flynn and Son, architects, 60 South Mall, Cork. Dep. £5.

North Westmorland R.D.C.—Eight water-closets and three coal-houses, and repairs to existing out-offices at Shordale-cottages, Warcop. A. Knewstubb (L.), architect and surveyor, St. Andrew's-chamb., Penrith.

Weymouth and Melcombe Regis T.C.—Strong room at Municipal Offices, Weymouth. B.S., 6, Pulteney-bldgs.

NOVEMBER 1.

Belfast T.C.—Four rescue, demolition and decontamination depots in corporation yards at (1) Albert-st., (2) River-tce., (3) Clara-st., and (4) Clifton Park-ave.; internal plumbing of above four rescue, demolition and decontamination depots, and depot at Queen's Bridge yard; installation of heating systems to four rescue, demolition and decontamination depots, and depot at Queen's Bridge yard; and installation of electric lighting to the four rescue, demolition and decontamination depots, and depot at Queen's Bridge yard. City Surveyor, Architectural Section (Room 91), City Hall.

Scarborough T.C.—Air raid shelters in various school playgrounds. H. V. Overfield, B. and Water E.

NOVEMBER 2.

Petworth R.D.C.—Pumping station. J. Taylor and Sons, engineers, Caxton House, Westminster, S.W.1. Dep. £5.

NOVEMBER 3.

Brighton C.B. — Sub-station building, foundations, etc., at Valley-dr. W. N. C. Clinch, Engineer and Manager, Elect. Dept., Castle-sq. Dep. £1 1s.

NOVEMBER 6.

Cheshire C.C.—Child welfare centre at Okell-st., Runcorn. F. Anstead Browne (F.), County Architect, The Castle, Chester. Dep. £2 2s.

Flintshire C.C.—Conversion of bedroom to bathroom at Mynydd Isa, near Mold, and conversion of store-room to bathroom, etc., at Kinnerton. T. Duncan Cameron, County Agricultural Officer, Mold.

NOVEMBER 7.

Wicklow U.D.C.—10 houses at Ballynerrin and 34 houses in other parts of town, etc. J. T. O'Byrne, Consulting E., Wicklow. Dep. £10 10s.

NOVEMBER 8.

Newcastle-upon-Tyne T.C.—Extensions to Wingrove car-sheds, Westgate-rd. City Architect, 78, Cloth Market. Dep. £2 2s.

Somerset C.C.—New buildings, comprising stores for protective equipment, muster rooms, etc., viz., at Flax Bourton, Yeovil, Frome, Minehead police stations. R. O. Harris, County Architect, Park-st., Taunton. Dep. £1 1s. each.

NOVEMBER 10.

Taunton.—Small extension to Isolation Hospital at Cheddon-rd., for Taunton and District Joint Hospital Board. Samson and Colthurst, architects, 1, Hammet-st.

NOVEMBER 20.

New Ross U.D.C.—Forty-nine houses at New Ross, and development works including new roads, paths, etc. J. V. Downes, architect, 53, Fitzwilliam-sq., Dublin. Dep. £5 5s.

PAINTING, ELECTRIC LIGHTING, HEATING, &c.

OCTOBER 30.

Fylde Water Board.—External painting of head office and other buildings in Sefton-st., Blackpool. John Hall, clerk, Sefton-st., Blackpool.

Scottish Special Housing Association, Ltd.—Installation of central heating system, hot-water supply and steam system at following evacuation camps: Middleton, Goubridge Belmont, Meigle, Glengonnar, Abington; Dounans Farm, Aberfoyle. N. J. Campbell, sec., 11, Drumsheugh-gdns., Edinburgh, 3

Wicklow Board of Health.—New fence at Mount Kennedy Demesne Cottage site. P. J. Foley, E., 32, Lr. Abbey-st., Dublin.

OCTOBER 31.

Beeston and Stapleford U.D.C.—Repainting of 36 houses on Council's housing estates at Stapleford. Housing Inspector, Town Hall, Beeston. Dep. £2 2s. (Local painters only.)

Douglas, I. of M.—Tenders for work and supplies. B. E. Sargeaunt, Government Secretary.

NOVEMBER 1.

Broadstairs and St. Peter's U.D.C.—Electric lighting installation for public air raid shelters. S. W. Richardson, E. and S.

NOVEMBER 2.

Bishopstoke (Hants).—Decorations at 19 and 21, Scotter-rd. Secretary, Bishopstoke Working Men's Social Club.

NOVEMBER 3.

Sunderland C.B.—Sanitary fittings, wall tiling and terrazzo at municipal hospital. B.E.

FEDERATED EMPLOYERS'

Insurance Association Ltd.

(non-tariff)

Head Office:
8, King St., Manchester

London Office:
23, Lawrence Lane, Cheapside, London, E.C.2

All Classes of Insurance Transacted

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NOVEMBER 4.

Haltemprice U.D.C.—External painting of 96 houses in various parts of Hessle and Cottingham. T. C. Slack, E. and S.

Lisnaskea R.D.C.—Maintenance and other works. R. Irvine, Clerk of Council, Board-room, Workhouse.

NOVEMBER 6.

***Finsbury B.C.**—Interior decoration of 144 flats at Margery-st. housing estate, W.C.1. B.E.

Tiverton T.C.—Exterior painting of 41-64, Council-gardens. B.S.

NOVEMBER 8.

***Newcastle-upon-Tyne T.C.**—Heating and hot-water installation for Wingrove car depot, Westgate-rd. City Architect, 18, Cloth Market. Dep. £2 2s.

NOVEMBER 10.

Dartford T.C.—Interior painting of 350 houses on corporation's housing estates. J. James Hurtley, T.C. Dep. £2 2s.

NOVEMBER 14.

Barrow-in-Furness T.C. — Reflooring of St. Paul's junior and infants' school. F. L. Wooldridge, Town Hall.

Keighley T.C.—Painting and decorating works at Old Council offices, Oakworth. Borough Architect, College-st. Dep. £1.

Magherafelt.—Heating, plumbing and electrical installation at additions to Rainey's endowed school, Magherafelt, for Rainey's School Board. Hobart and Heron, architects, Scottish Provident-bldgs., Belfast.

South Shields E.C.—Cleaning and painting of several schools. Sec., Education Dept.

Preston C.B.—Belfast roof to cover an area of approximately 89 ft. 7 in. by 51 ft. Borough Electrical Engineer, 41, Lune-st. Deposit £1.

NOVEMBER 15.

Scotland (H.M.O.W.).—Plumber maintenance works at Government buildings in Stirling for period January 1, 1940, until December 31, 1940. Architect, 122, George-st., Edinburgh, 2. Dep. 5s.

NO DATE.

Healey Co-operative Society, Ltd.—Outside of premises. Apply, 57, Market-st., Whitworth.

MATERIALS, &c.

OCTOBER 28.

Bath T.C.—Surface boxes and sundry castings. Waterworks, E., 8a, Terrace-walk.

OCTOBER 31.

Egyptian Irrigation Department.—One circular elevated water tank. Inspecting Engineer to the Egyptian Government, 41, Tothill-street, London, S.W.1.

NOVEMBER 1.

Cams. C.C.—Road materials. C.S., Cambridge.

Northamptonshire C.C.—Washed pit gravel for surface dressing. E. A. Black, C.S., Northampton.

NOVEMBER 3.

Bootle T.C.—1,000 "Elsan" or other approved type of chemical closets, etc. W. A. Harrison, T.C.

NOVEMBER 6.

Coleraine T.C.—Portland cement, etc W. E. Henry, T.C.

NOVEMBER 13.

South African Railways and Harbours Administration.—Pig iron, ferro-manganese and ferro-silicon. Secretary to Tender Board, Room 420, South African Railways and Harbours, Headquarters Offices, Johannesburg.

NOVEMBER 18.

Bath T.C.—Spatar macadam and clean broken stone. City E. Dep. 10s.

ENGINEERING, IRON AND STEEL.

OCTOBER 27.

†**Birmingham T.C.**—High-pressure steam pipework and associated valves and drain pipework in connection with four new boilers and two new turbo-alternator sets at Hams Hall "B" Power Station, Lea Marston. F. Forrest, Chief Engineer and Manager, 14, Dale End, Birmingham. Dep. £2.

OCTOBER 30.

Macclesfield T.C.—Filtration plant at Ridgegate reservoir. H. Lapworth and Partners, engineers, 25, Victoria-st., Westminster, S.W.1. Dep. £2.

South Riding Board of Health.—Construction of sewer on right bank of River Suir, in Cahir. T. P. Meade, C.E., Emmet-st., Clonmel. Dep. £3.

OCTOBER 31.

Egyptian Government. — Pumping and generating station near Wasta in Beni Suef Province, for Ministry of Public Works. Chief Inspecting Engineer, 41, Tothill-street, London, S.W.1. Charge £3 1s. 6d.

NOVEMBER 1.

Egyptian Government.—Supply, delivery and erection of Zawamel Bridge over Ismailia Canal Kilo 37.450, complete with necessary building work, steelwork, fenders, accessories, etc., and removal of the existing bridge, for Ministry of Public Works, First Circle of Irrigation. Inspector of Irrigation, First Circle, Ministry of Public Works, Cairo.

NOVEMBER 2.

South African Railways and Harbour Administration.—Steelwork, bolts, rivets, etc. Department of Overseas Trade, 35, Old Queen-street, London, S.W.1. (Ref. T.26863/39.)

NOVEMBER 4.

Ripon T.C.—Covered service reservoir with mass concrete walls and reinforced concrete roof, together with all necessary ancillary works, in parish of Studley Roger. Silcock and Simpson, consulting engineers, 10, Park-row, Leeds, 1. Deposit £5.

Stafford Rural District Council.—Laying of about 188,920 yds. of mains and valves and fittings, in Adbaston, Bradley, Church Eaton, Ellenhall, Forton, Gnosall, Haughton, High Offley, Norbury, Ranton, Weston Jones, and special castings, and construction of a mass concrete reservoir, near Knightley Grange, and also construction of a brick pumping station near Gnosall. Elliott and Brown, consulting engineers, Burton-buildings, Parliament-street, Nottingham. Deposits £4 4s. each contract.

ROAD, SEWERAGE AND WATER WORKS.

NOVEMBER 1.

Dublin Board of Assistance.—Making of concrete road at St. Patrick's Home, Pelletstown, Ashtown. G. L. O'Connor, architect, 27, Dawson-st., Dublin. Dep. £3 3s.

NOVEMBER 2.

Kilkeel R.D.C.—Water mains and fittings at Tollymore and Carnacaville. J. J. Bell, clerk.

Leeds T.C.—Kerbing, etc., Calverley-av., Calverley-dr., Wolley-av., Acton-dr., Aston-cres. H. G. Firth, Highways E., 155, Kirkstall-rd. Dep. £1 1s.

Swanage U.D.C.—Making-up of Priests-rds. F. Camble, S.

NOVEMBER 6.

Garforth U.D.C.—540 lin. yd. of concrete and glazed-ware pipe sewers. M. G. and R. W. Weekes, chartered civil engineers, 75, Victoria-st., London, S.W.1. Dep. £2 2s.

NOVEMBER 7.

Scottish Special Housing Association, Ltd.—150 lin. yd. of access road; supplying and laying 850 lin. yd. of 9-in. and 6-in. fireclay pipe sewers and constructing septic tank, filters, and relative works; and supplying and laying 530 lin. yd. of 3-in. dia. spun iron water mains at Belmont Castle, Meigle. Parker, Gordon and Ogilvie, engineers, 3, Palmerston-pl., Edinburgh, 12.

NOVEMBER 13.

Eastbourne C.B.—Foul water and surface water sewers in Brodrick-rd. B.E., 4, Saffrons-rd.

Public Appointments.

NOVEMBER 4.

***Poplar B.C.**—Temporary technical assistant for A.R.P. shelters. S. A. Findlay, B.E. and S.

CURRENT AND PROPOSED BUILDING WORK*

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Where business representatives cannot be seen personally at this stage, this should be mentioned. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

Atherton.—U.D.C. to seek sanction to complete contract for 30 houses.

Bromley.—T.C. approved: W. L. Cook and Co., Ltd., 38 houses, Hazelmere-way, and Heath Rise.

Coventry.—T.C. approved: Two warden's posts (underground), Whitley Common, Daventry-rd., and Jubilee-cres., Corporation; extension to garage premises, Daventry-rd., F. A. Jones; additions to ambulance hall, Parkside, Trustees of St. John Ambulance; A.R.P. control room, off Cross-rd., Alfred Herbert, Ltd.

Croydon.—C.B. received consent of Electricity Commissioners for power station on site off Purley-way, subject to conditions.—B.E. prepared plans for surface type shelter to accommodate 100 persons, at £300, at the Polytechnic school.

Darlington.—A. C. Lynch, 45, Cleveland-av., prepared plans for factory, Neasham-rd., for Thecla Engineering Co., Ltd.

Dartford.—T.C. approved:—Layout of block of flats, Bayly-rd., W. J. Draper & Son; block of 5 shops, junction of Brent-ln. and Darenth-rd., P. C. Brazier; extension to workshop, Brooklands, Baldwin Instrument Co., Ltd.; ante-natal clinic, county hospital, West Hill, Kent C.C.

Dunston-on-Tyne.—Arthur and Kirkup, 13, Swinburne-st., Gateshead, prepared plans for offices at Team Glassworks for G. Davidson and Co., Ltd.

Gateshead.—Hetherington and Wilson, 52, Westgate-rd., Newcastle-on-Tyne, prepared layout plans for South Saltwell estate, for F. Bowman, and for premises at Queensway, Team Valley estate, for North-Eastern Trading Estates, Ltd., on behalf of St. Mary's Motors, Ltd.—Plans under consideration for theatre in Saltwell View, for Misses Dodds. Architects, Hill and Honeyman, 6, Eldon-sq., Newcastle-on-Tyne.—Cackett, Burns Dick and MacKellar, 21, Ellison-pl., Newcastle-on-Tyne, prepared plans for factory, Second-av., Team Valley estate, for Danish Bacon Co., Ltd.

Hastings.—T.C. approved lay out plan, estate off Bexhill-rd., St. Leonards, Bexleigh Estates, Ltd., owners, per Hubbard Ford, architect.

Jarrow.—Palmers Hospital to be altered. Plans by W. J. Merrett, C.S., Shire Hall, Durham.

Leeds.—T.C. approved:—Shops, King-ln. and Garth-walk, Henry Lax, Ltd., Clock-bldgs., Harehills, 9; shops, Dixon-ln., Wortley, A. Maude and Sons, Shafton-ln. 11.

Lewisham.—B.C. approved: A. C. Cowtan, one-storey addition to factory, 9, Staplehurst-rd., Lewisham; Wates, Ltd., houses in Woodham-rd., Catford; A. J. Allen, addition and alterations to garage in Bromley-rd., Catford.

Lichfield.—T.C. approved: Extension to Phœnix Foundry, for Chamberlin and Hill; 50 houses, Curborough-rd., Hayes Bridge Estates, Ltd.

Newcastle-on-Tyne.—Marshall, Tweedy and Bourn, Grainger House, Blackett-st., prepared estate plan for Fairway Estate, Benton, for North Heaton Development Co., Ltd., 40, Grey-st.—Tyne Improvement Commission decide to continue with building of quay 800 ft. long at north-west corner of Tyne Dock.

Orpington.—U.D.C. made application to M.H. for loan of £7,677 for cleansing and protective building for use in war-time. M. Sheffield, P.A.S.I., appointed quantity surveyor.

Penzance.—T.C. approved proposal to proceed with isolation hospital, at £10,000. J. H. Blight, B.S., to proceed with preparation of plans.

Preston.—T.C. approved: A. C. M. Lillie, for 62nd Searchlight Regiment, headquarters, Deepdale-rd.; E. Middleton, for R. L. Dilworth, Ltd., 25 houses, Franklands-dr.; Austin and Paley, for vicar and churchwardens, St. John's Parish Church, house, off Church-st.

Reigate.—T.C. approved: Additions to works, Cavendish-road, Redhill, Surrey Fine Art Press.

Shipley. — U.D.C. proposes to complete widening of Otley-rd. from Valley-rd. to Market-pl. at £20,000.

Slough.—T.C. to construct air raid shelter at rear of Town Hall in brickwork, providing accommodation for approximately 150 people, at £500.—Plans passed: Rheostatic Co., Ltd., general maintenance shop and lavatories, of Farnham-rd.; Hawker Aircraft, Ltd., wing shop drainage, off Sutton-la., Colnbrook; International Alloys, Ltd., two furnace-rooms and sub-station, off Buckingham-av.

Stockton-on-Tees.—Final plans prepared for additions to St. Bede's R.C. school, for managers, and erection of R.C. school for girls. Architect, A. Harrison, 69, High-st.

Wakefield.—T.C. approved:—J. P. Firth, estate layout of roads and 44 houses, Oakwood and Beechwood-ave., Flanshaw, for G. Crook & Sons, Ltd.; warehouse in Henry-st., J. C. Waterhouse.

Warwick.—T.C. approved: Conversion of existing garages into A.R.P. cleansing depot and erection of temporary garages, police station, Barrack-st., and emergency hospital scheme, Warwick P.A. institution, Lakin-rd., for Warwickshire C.C.; factory extensions, Castle Engineering Works, Saltisford; eight pairs of semi-detached houses, Montague-rd., S. C. Marsh.

Wednesbury.—T.C approved: Edward Elwell, Ltd., works extension, St. Paul's-road.

*See also List of Contracts Open.

***In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.**

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1939

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors]

	Crafts-men.	Lab-ourers.
Aberavon	1/7½	1/2¾
Aberdare	1/7½	1/2¾
Abergavenny	1/7	1/2½
Abingdon	1/6	1/1½
Accrington	1/7½	1/2¾
Aldeburgh	1/4	1/0
Aldershot	1/6	1/1½
Alfreton	1/7½	1/2¾
Alnwick	1/7	1/2½
Altrincham	1/7½	1/2¾
Amble	1/7	1/2½
Amersham	1/6	1/1½
Ammanford	1/7½	1/2¾
Andover	1/5½	1/1½
Ardingley	1/5½	1/1½
Arundel	1/5½	1/1½
Ascot	1/5½	1/1½
Ashby-de-la-Zouch	1/6	1/1½
Ashford (Kent)	1/5½	1/1½
Ashford(Middlesex)	1/7½	1/2¾
Ashington	1/7	1/2½
Ashtead	1/7½	1/2¾
Ashton-under-Lyme	1/7½	1/2¾
Aylesbury	1/5½	1/1½
Aylsham	1/4½	1/0½
Bagshot	1/5½	1/1½
Banbury	1/5½	1/1½
Barnsley	1/7½	1/2¾
Barnstaple	1/5½	1/1½
Barrow-in-Furness	1/7½	1/2¾
Barry	1/7½	1/2¾
Basingstoke	1/5½	1/1½
Bath	1/7	1/2½
Batley	1/7½	1/2¾
Beaconsfield	1/6	1/1½
Beccles	1/4	1/0
Bedford	1/7	1/2½
Berkhamsted	1/5½	1/1½
Berwick	1/7	1/2½
Beverley	1/7½	1/2¾
Bexhill-on-Sea	1/6	1/1½
Bideford	1/5½	1/1½
Biggleswade	1/5	1/0½
Billericay	1/5	1/0½
Birchington	1/5½	1/1½
Birkenhead	‡§1/10	¶
Birmingham	1/7½	1/2¾
Bishop Auckland	1/7½	1/2¾
Bishops Stortford	1/6½	1/2
Blackburn	1/7½	1/2¾
Blackpool	1/7½	1/2¾
Blyth	1/7½	1/2¾
Bognor Regis	1/5½	1/2¾
Bolton	1/7½	1/1½
Bournemouth	1/6½	1/2¾
Bracknell	1/5½	1/2
Bradford	1/7½	1/1½
Bradford-on-Avon	1/4½*	1/2¾
Braintree	1/5½	1/0½
Brentwood	1/7	1/1½
Bridgwater	1/6	1/2½
Bridlington	1/7	1/1½
Brighouse	1/7½	1/2½
Brighton	1/6½	1/2¾
Bristol	1/7½	1/2
Broadstairs	1/5½	1/2½
Bromsgrove	1/7	1/1½
Buckley	1/7½	1/2½
Bungay	1/3½	1/2¾
Burnham-on-Crouch	1/4	11¼
Burnley	1/7½	1/0
Burslem	1/7½	1/2¾
Burton-on-Trent	1/7½	1/2¾
Bury	1/7½	1/2¾
Bury St. Edmunds	1/5	1/2¾
Buxton	1/7	1/0½
Byfleet	1/6	1/2½
Cambridge	1/7	1/1½
Canterbury	1/5½	1/2¾
Cardiff	1/7½	1/1½
Carlisle	1/7½	1/2¾
Carnforth	1/7½	1/2¾
Castleford	1/7½	1/2¾
Caterham	1/7½	1/2¾
Chard	1/4½*	1/0½
Chatham	1/6½	1/2
Chelmsford	1/7	1/2¼
Cheltenham	1/6½	1/2
Chepstow	1/6½	1/2
Chertsey	1/6½	1/2
Chester	1/7½	1/2¾
Chesterfield	1/7½	1/2¾
Chichester	1/5½	1/1½
Chorley	1/7½	1/2¾
Cirencester	1/5*	1/0½
Clacton	1/5½	1/1½
Cleveleys	1/7½	1/2¾
Clitheroe	1/7½	1/2¾
Cobham (Surrey)	1/6½	1/2
Colchester	1/7	1/2½
Colwyn Bay	1/6½	1/2
Congleton	1/7	1/2½
Coventry	1/7½	1/2¾
Cranbrook	1/5½	1/1½
Cranleigh	1/5½	1/1½
Crawley	1/5½	1/1½
Crewe	1/7	1/2½
Cromer	1/4½	1/0½
Crowborough	1/5½	1/1½
Cuckfield	1/5½	1/1½
Darlington	1/7½	1/2¾
Darwen	1/7½	1/2¾
Daventry	1/6	1/1½
Deal	1/5½	1/1½
Denbigh	1/6	1/1½
Derby	1/7½	1/2¾
Devizes	1/4*	1/0
Dewsbury	1/7½	1/2¾
Didcot	1/5½	1/1½
Diss	1/4	1/0
Doncaster	1/7½	1/2¾
Dorchester	1/5*	1/0¾
Dorking	1/6	1/1½
Dover	1/5½	1/1½
Dovercourt	1/5½	1/1½
Driffield	1/6	1/1½
Droitwich	1/7	1/2½
Dudley	1/7	1/2¾
Dunstable	1/6	1/1½
Durham City	1/7½	1/2¾
Eastbourne	1/6½	1/2
E. Glam. (Mon. Val.)	1/7½	1/2¾
East Grinstead	1/5½	1/1½
Edenbridge	1/5½	1/1½
Ely	1/4	1/0
Epping	1/7½	1/2¾
Exeter	1/7†	1/2½
Exmouth	1/6	1/1½
Fakenham	1/4½	1/0½
Falmouth	1/6	1/1½
Fareham	1/6½	1/2
Faversham	1/5½	1/1½
Felixstowe	1/6½	1/2
Filey	1/6	1/1½
Fleetwood	1/7½	1/2¾
Flint	1/7½	1/2¾
Folkestone	1/5½	1/1½
Frinton-on-Sea	1/5½	1/1½
Frome	1/4½*	1/0½
Gainsborough	1/6½	1/2
Gateshead	1/7½	1/2¾
Gillingham (Kent)	1/6½	1/2
Glossop	1/7½	1/2¾
Gloucester	1/7†	1/2½
Godalming	1/5½	1/1½
Goole	1/7½	1/2¾
Gosport	1/7	1/2½
Grantham	1/6½	1/2
Gravesend	1/7	1/2½
Great Yarmouth	1/5½	1/1½
Grimsby	1/7½	1/2¾
Guildford	1/5½	1/1½
Guilsborough	1/6	1/1½
Halifax	1/7½	1/2¾
Hanley	1/7½	1/2¾
Harpenden	1/6½	1/2
Harrogate	1/7½	1/2¾
Hartlepools	1/7½	1/2¾
Harwich	1/5½	1/1½
Haslemere	1/5½	1/1½
Hastings	1/5½	1/1½
Hatfield	1/7	1/2½
Haywards Heath	1/5½	1/1½
Hednesford	1/7	1/2½
Hemel Hempstead	1/6½	1/2
Henley-on-Thames	1/5½	1/1½
Hereford	1/5½*	1/1½
Herne Bay	1/5½	1/1½
Hertford	1/7	1/2½
Heysham	1/7½	1/2¾
Hitchin	1/6	1/1½
Hoddesdon	1/7	1/2½
Holt (Norfolk)	1/4	1/0
Horley	1/5½	1/1½
Horsham	1/5½	1/1½
Horwich	1/7½	1/2½
Huddersfield	1/7½	1/2½
Hull	1/7½	1/2¾
Hunstanton	1/4½	1/0½
Huntingdon	1/5	1/0½
Ilfracombe	1/5½	1/1½
Ingatestone	1/6	1/1½
Ipswich	1/7	1/2½
Isle of Thanet	1/5½	1/1½
Isle of Wight	1/1½	1/0½
Keighley	1/7½	1/2½
Kenilworth	1/7½	1/2¾
Kettering	1/7	1/2½
Kidderminster	1/7	1/2½
King's Lynn	1/5½	1/1½
Kirkham	1/7½	1/2¾
Knowle	1/7	1/2½
Lancaster	1/7½	1/2¾
Leamington	1/7½	1/2¾
Leatherhead	1/6½	1/2
Leeds	1/7½	1/2¾
Leicester	1/7½	1/2¾
Leighton Buzzard	1/4½	1/0½
Letchworth	1/6	1/1½
Lewes	1/5½	1/1½
Lichfield	1/6½	1/2
Lincoln	1/7½	1/2¾
Littlehampton	1/5½	1/1½
Liverpool	‡§1/10	¶
Llandudno	1/6½	1/2
Llanelly	1/7½	1/2¾
London—		
12 m. radius	1/9*	1/3¾
12-15 m. radius	1/8½*	1/3½
Long Eaton	1/7½	1/2¾
Longton	1/7½	1/2¾
Loughborough	1/7½	1/2¾
Louth	1/6	1/1½
Lowestoft	1/5½	1/1½
Luton	1/7	1/2½
Macclesfield	1/7	1/2½
Maidenhead	1/6	1/1½
Maidstone	1/6	1/1½
Malvern	1/6	1/1½
Manchester	1/7½	1/2¾
Manningtree	1/4½	1/0½
Mansfield	1/7½	1/2¾
March	1/4½	1/0½
Margate	1/5½	1/1½
Market Harborough	1/6½	1/2
Matlock	1/6	1/1½
Melton Constable	1/4	1/0
Melton Mowbray	1/6½	1/2
Merthyr	1/7½	1/2¾
Middlesbrough	1/7½	1/2¾
Middleton	1/7½	1/2¾
Middlewich	1/7	1/2½
Milford Haven	1/6	1/1½
Morecambe	1/7½	1/2¾
Morley	1/7½	1/2¾
Mundesley	1/4½	1/0½
Nantwich	1/7	1/2½
Nelson	1/7½	1/2¾
Newark-on-Trent	1/7	1/2½
Newbury	1/5½	1/1½
Newcastle-on-Tyne	1/7½	1/2¾
Newcastle-u-Lyme	1/7½	1/2¾
New Forest	1/4½	1/0½
Newmarket	1/5½	1/1½
Newport, Mon.	1/7½	1/2¾
Newport Pagnell	1/5½	1/1½
Northampton	1/7½	1/2¾
Norwich	1/7½	1/2¾
Nottingham	1/7½	1/2¾
Nuneaton	1/7½	1/2¾
Oakham	1/6	1/1½
Oldham	1/7½	1/2¾
Ormskirk	1/7½	1/2¾
Oxford	1/7	1/2½
Oxted	1/6	1/1½
Paignton	1/7	1/2½
Peterborough	1/7	1/2½
Plymouth	1/7½	1/2¾
Pontefract	1/7½	1/2¾
Pontypridd	1/7½	1/2¾
Port Talbot	1/7½	1/2¾
Portsmouth	1/7	1/2½
Preston	1/7½	1/2¾
Pulborough	1/5½	1/1½
Ramsgate	1/5½	1/1½
Reading	1/7	1/2½
Redditch (Northern)	1/6½	1/2
Redhill	1/6	1/1½
Ripon	1/6	1/1½
Rochdale	1/7½	1/2¾
Rochester	1/6½	1/2
Rugby	1/7½	1/2¾
Saffron Walden	1/4½	1/0½
St. Albans	1/7	1/2½
St. Helens	1/7½	1/2¾
St. Neots	1/4½	1/0½
Salisbury City	1/4½*	1/0½
Salisbury Plain	1/6½•	1/2
Sawbridgeworth	1/6	1/1½
Saxmundham	1/4	1/0
Scarborough	1/7	1/2½
Scunthorpe	1/7½	1/2¾
Selby	1/7½	1/2¾
Sevenoaks	1/6	1/1½
Sheerness	1/5	1/0½
Sheffield	1/7½	1/2½
Shipley	1/7½	1/2½
Shoeburyness	1/7	1/2½
Shoreham	1/6½	1/2
Shrewsbury	1/6½	1/2
Sittingbourne	1/5½	1/1½
Skegness	1/6½	1/2
Sleaford	1/6	1/1½
Slough	1/6½	1/2
Southampton	1/7	1/2½
Southend-on-Sea	1/7	1/2½
Southport	1/7½	1/2¾
South Shields	1/7½	1/2¾
Spalding	1/5½	1/1½
Stafford	1/7	1/2½
Staines	1/6½	1/2
Stamford	1/6½	1/2
Stevenage	1/6	1/1½
Stockport	1/7½	1/2¾
Stockton-on-Tees	1/7½	1/2¾
Stoke-on-Trent	1/7½	1/2¾
Stourbridge	1/7	1/2½
Stourport	1/7	1/2½
Stowmarket	1/4½	1/0½
Stratford-on-Avon	1/6½	1/2
Stroud	1/6†	1/1½
Sunderland	1/7½	1/2¾
Sutton Coldfield	1/7½	1/2¾
Swaffham	1/4	1/0
Swanage	1/5½*	1/1½
Swansea	1/7½	1/2¾
Swindon	1/6*	1/1½
Tamworth	1/7	1/2½
Taunton	1/5½	1/1½
Tenterden	1/5½	1/1½
Thames Haven	1/7½	1/2¾
Thetford	1/5	1/0½
Thorpe Bay	1/7	1/2½
Todmorden	1/7½	1/2¾
Tonbridge	1/6	1/1½
Torquay	1/7	1/2½
Totnes	1/5½	1/1½
Trowbridge	1/4½*	1/0½
Truro	1/4½	1/0½
Tunbridge Wells	1/6	1/1½
Uppingham	1/6	1/1½
Uttoxeter	1/6	1/1½
Wakefield	1/7½	1/2¾
Walsall	1/7½	1/2¾
Walsden	1/7½	1/2¾
Walton-on-Naze	1/5½	1/1½
Ware	1/7	1/2½
Warminster	1/4½*	1/0½
Warrington	1/7½	1/2¾
Warwick	1/7½	1/2¾
Wellingborough	1/7	1/2½
Welwyn	1/6½	1/2
Welwyn Gar. City	1/7½	1/2¾
Wells (Norfolk)	1/4	1/0
West Bromwich	1/7½	1/2¾
Westcliff-on-Sea	1/7	1/2½
Weston-super-Mare	1/6½	1/2
Weybridge	1/6½	1/2
Weymouth	1/5*	1/0¾
Whitby	1/6½	1/2
Whitstable	1/5½	1/1½
Widnes	1/7½	1/2¾
Wigan	1/7½	1/2¾
Wigton	1/6	1/1½
Willington	1/7	1/2½
Wilmslow	1/7½	1/2¾
Winchester	1/6	1/1½
Windermere	1/6	1/1½
Windsor	1/6½	1/2
Wisbech	1/5	1/0½
Witham	1/5½	1/1½
Woking	1/6	1/1½
Wokingham	1/5½	1/1½
Wolverhampton	1/7½	1/2¾
Woodbridge	1/5	1/0¾
Worcester	1/7	1/2½
Workington	1/6	1/1½
Worksop	1/7	1/2½
Worthing	1/5½	1/1½
Wrexham	1/7	1/2½
Wroxham	1/5	1/0½
Wycombe	1/6	1/1½
Wymondham	1/4½	1/0½
Yeovil	1/6	1/1½
York	1/7½	1/2½

• Painters 1d. less than other Craftsmen. † Painters ½d. less than other Craftsmen. ‡ Plasterers 1/10½.

¶ Tradesman's Labourers 1/4½. Navvies and General Labourers 1/4.

§ Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.

For Building Trade Wages in Scotland, see page 633.

PRICES CURRENT OF MATERIALS*

Note: Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry. The softwood prices are the maxima established by the Timber Control Department.

At present linseed oil and genuine spirits of turpentine can only be supplied in cans in small quantities. Lead can only be obtained for Government or A.R.P. work and urgent repairs.

BRICKS, &c.

Delivered to site, City and Central Area, Full Lorry Loads. £ s. d.

Best Stocks	4 15 0
Second Hard Stocks	4 8 0

Per 1,000. Delivered at London Goods Stations.

2½ in. Phorpres.	King's Cross Station. per 1,000. s. d.	To sites in W.C. District. per 1,000. s. d.
Pressed bricks	46 3	50 6
Cellular bricks	46 3	50 6
Keyed bricks	48 3	52 6
Cellular Keyed bricks	48 3	52 6
Rustic bricks	*66 3	*70 6
Cellular Rustic bricks	*66 3	*70 6
Single Bullnose	64 3	68 6
White bricks	*66 3	*70 6
Sandfaced bricks	—	75 6

* Subject to a special discount of 2s. per 1,000 ft. accompanied by order for Pressed.

	£ s. d.
White Midhurst Facing Bricks (delivered London site)	3 12 6
Best blue Pressed Staffs	8 6 6
Do. Bullnose	8 16 6
Blue Wire Cuts	7 4 0

Best Stourbridge Fire Brick :—

£ s. d.		£ s. d.
2½ in. 7 15 0	3 in.	8 15 0

GLAZED BRICKS—

Best White Ivory and Salt Glazed		D'ble Str'tch'rs ..	32 10 0
		D'ble Headers ..	29 10 0
Stretcher.....	24 0 0	One side & two ends	33 10 0
Headers	23 10 0	Two sides & one end	34 10 0
Quoins, Bullnose and 4½in. Flats	30 10 0	Splays and Squints	31 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

"PHORPRES" HOLLOW PARTITION BLOCKS.

2" per yd. sup. ..	2 3	3" per yd. sup. ..	2 9
2½" " "	2 6	4" " "	3 1

CLINKER CONCRETE.

2" per yd. sup. ..	1 6	3" per yd. sup. ..	2 0
2½ " "	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup. ..	3 0	3" per yd. sup. ..	3 8
2½" " "	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2"	2 6	12" x 9" x 3"	3 0
12" x 9" x 2½"	2 9	12" x 9" x 4"	3 9

Per yard super d/d. Free on site, London

	s. d.		
Thames Ballast. ...	7 3	per yd.	delivered 2 miles radius Paddington.
Pit Ballast	6 3	" "	
Pit Sand	7 9	" "	
Washed Sand	8 3	" "	
¾in. Shingle	7 3	" "	
¾in. Broken Brick	11 3	" "	
Pan Breeze	8 3	" "	

CEMENT.

Best British Portland Cement. Standard Specification delivered London Area in jute sacks (11 to ton), or paper bags (20 to ton) free (non-returnable) :—

	£ s. d.
4 ton loads and upwards site ..... Per ton	2 1 0
1 ton to 4 tons site	2 4 0
Alongside Vauxhall in 80-ton lots	1 18 6
"Ferrocrete" Rapid Hardening Cement :—	
4 ton loads and upwards site	2 7 0
1 ton to 4 tons site	2 10 0
Alongside Vauxhall in 80-ton lots	2 4 6

Stores in Reserved Bins at Works 1/6 ton extra.

NOTE.—Jute sacks are charged 1s. 6d. each and credited 1s. 6d. nett, if returned in good condition within three months, carriage paid.

"Aquacrete" Water Repellent, "Blue Circle" Cement, 30/- per ton extra on ordinary "Blue Circle" Portland Cement prices.

"Colorcrete" Nos. 1 and 2 Coloured Rapid Hardening Portland Cement in 1-cwt. paper bags free (non-returnable) in 1-ton lots and upwards site 3 8 0

"Colorcrete," not rapid-hardening, in 1-cwt. paper bags free (non-returnable), according to colour, from £7 to £15 10s. per ton.

"Snowcrete" White Portland Cement in 1-cwt. paper bags free (non-returnable) 1 ton and upwards site 8 15 0

Super Cement (Waterproof) paper bags free	3 11 0
Roman Cement £6 15 Keene's Cement, White	5 10 0
Parian Cement £5 10 " " Pink	5 2 6

Cementone Colours for cement according to tints per cwt from £2 16s. 0d.

PLASTER.

£ s. d.		£ s. d.
Coarse, Pink 3 0 0	Sirapite, Coarse ..	3 10 0
" White .. 3 10 0	" Finish ..	3 18 0
Pioneer 3 10 6		
Super Carbo 2 7 6	4-ton loads and over London Area, paper bags free.	
Carbo Setting.... 2 12 6		
Best Ground Blue Lias Lime 1 17 6	Grey Stone Lime	2 2 0
	Chalk Lime	2 2 0
Granite Chippings 1 5 0	Hair per cwt. ...	2 7 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months, carriage paid.

Stourbridge Fireclay in sacks 37s. per ton at rly. dep.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube .... s. d. 2 10½

BEER STONE—RANDOM BLOCK—

Free on rail at Seaton Station. per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. "	3 1½

Selected approximate size one way, 1d. per cubic ft. extra, selected approximately three sizes or for special work, 3d. per cubic ft. extra.

PORTLAND STONE—

	s. d.
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube.	4 5
Do. do. delivered on road waggons as above stations, per ft. cube.	4 6
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ½d. beyond 30 ft.	
HOPTON-WOOD STONE—	
F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over P.ft.cb.	14 0
Sawn two sides.	22 6
HOPTON-WOOD STONE—	
Sawn three or four sides.	27 9
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station, London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... per ft. super	5 0
6 in. rubbed two sides, ditto .. "	5 6
3 in. sawn two sides slabs (random sizes) ..... "	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) (paving) ..... "	1 6½
1½ in. to 2 in., ditto. ..... "	1 3½
HARD YORK—	
Delivered at any Goods Station, London.	
Scrappled random blocks. ..... per ft. cube	6 3
6 in. sawn two sides landings to sizes (under 40 ft. super) ..... per ft. super	5 1½
6 in. rubbed two sides, ditto .... "	6 1½
4 in. sawn two sides slabs (random sizes) ..... "	3 1½
3 in. ditto ditto ..... "	2 5
2 in. self-faced random flags ..... Per yd. super	7 6

CAST STONE.

Delivered in London are in full van loads, per ft. cube: Plain, 7s. 6d. Moulded, 8s. 6d. Sills, 10s. 0d.

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality.	£ s. d.
Dry Austrian Wainscot, per ft. cube.	0 17 0
Dry American and/or Japanese Figured Oak, per ft. cube. ..... 10 0 to	0 12 6
Dry American and/or Japanese plain Oak, per ft. cube	0 11 6
Dry sq. edged Honduras Mahogany, per ft. cube.	0 15 0
Dry log-cut Honduras Mahogany, per ft. cube. ..... 12 6 to	0 16 0
Dry Cuba Mahogany, per ft. cube.	0 18 0
Dry Teak, per ft. cube.	0 14 0
Dry American Whitewood, per ft. cube.	0 10 6
Dry Australian Walnut, per ft. cube	0 17 0
Dry Queensland Silky Oak, per ft. cube.	0 11 0
Dry African Mahogany, per ft. cube	0 10 0
Dry African Whitewood, per ft. cube.	0 8 0
Dry English Wainscot Oak, per ft. cube.	0 16 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt. ..... 4 7 0 to	5 10 0

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 ×11.	£38 10	3 × 6.	£31 10
4 × 9.	38 10	3 ×11.	38 10
4 × 8.	35 10	2 ×11.	38 10
4 × 7.	35 10	3 × 9.	37 10
3 × 8.	32 10	2½× 9.	37 10
3 × 7.	31 10	3 × 4½	30 0
2½× 7.	31 10	3 × 4.	30 0

Having secured the Contract— What about the Steel Scaffolding?

TUBULAR

—S & C—

SCAFFOLDING

For the lowest Prices apply to the Oldest Firm in The Scaffolding Trade.

STEPHENS & CARTER LTD.

The British Steel Scaffolding Co.

Paddington Green, London, W.2.

Telephone No. PADDINGTON 7661 (6 lines).

PLANED BOARDS.

1 ×11.	£43 10	1 × 9.	£39 10

PLAIN EDGE FLOORING.

Inches.	Per sq.	Inches.	Per sq.
¾	22/6	1¼	35/-
¾	25/-	1½	42/6
1	28/6		

TONGUED AND GROOVED FLOORING. Inches.	Per sq.	MATCHING (BEST) Inches.	Per sq.
1	29/-	⅝	23/-
1¼	35/6	¾	25/-
1½	43/-	1	29/-

Ins. BATTENS.	s. d.	SAWN LATHS.	s. d.
¾×2 per 100 ft.	2 9	Per bundle	2 6

SLATES.

First quality slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12 ..	31 5 0	18 by 10	16 10 0
22 by 12 ..	26 5 0	18 by 9	14 17 6
22 by 11 ..	23 12 6	16 by 10 ..	14 7 6
20 by 12 ..	23 2 0	16 by 8 ..	11 6 0
20 by 10 ..	20 15 0		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. ..... Per 1,000 f.o.r. London

		£ s. d.
Best machine-made tiles from Broseley or Staffordshire district.		4 2 6
Ditto hand-made ditto		4 17 6
Ornamental ditto		5 2 6
Hip and valley tiles (per dozen)	Hand-made	0 8 6
	Machine-made.	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	
R.S. Joists, cut and fitted	£16 0 0
Plain Compound Girders	19 0 0
" " Stanchions	21 0 0
In Roof Work	25 0 0

NOTE.—These prices are for standard pieces and not special pieces of an awkward nature.

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	16 12 6	⅝ in. to ½ in.	15 2 6
⅜ in.	15 12 6	⅝ in. to 2⅜ in.	14 12 6

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £10 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes. and Tubulars. Sizes. ⅛in. to ⅜in.	Standard Wrot. Mild Steel Tubes. and Tubulars. Sizes. ½in. to 2in.	Standard Flanges. Sizes. ⅛in. to 2in.	Standard Fittings.
	%	%	%	%
Gas	60	65	62½	58⅓
Water	57	62½	62½	55
Steam	53⅓	58⅓	51⅓	50
Gal. gas	50	55	51⅓	48⅓
Galv. water	45	50	43⅓	43⅓
Galv. steam	38⅓	43⅓	38⅓	40

C.I. HALF-ROUND GUTTERS—London Price ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/2	11½d.	3½d.
3½ in.	1/3	1/1	3½d.
4 in.	1/3	1/2	5d.
4½ in.	1/4	1/4	6d.
5 in.	1/7	1/5½	7d.

O.G. GUTTERS.

3 in.	1/6	1/3½	4d.
3½ in.	1/8	1/3½	5d.
4 in.	1/8	1/4	6d.
4½ in.	1/9	1/7	7d.
5 in.	2/2	1/9½	8d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches stock angles.
2 in.	1/9	1/2	1/9
2½ in.	1/10	1/4	2/1
3 in.	2/3	1/8	2/6
3½ in.	2/8	2/0	2/11
4 in.	3/1	2/5	3/6

NETT PRICES.

Tonnage allowance—4-ton lots, 5 per cent. 2-ton lots. 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices, ex Stock.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches. stock angles. s d.
2in. per yd. in 6 fts.	3 0	2 1	2 6
2½ in. "	3 6	2 4	3 2
3 in.	3 9	2 6	3 10
3½ in.	3 10	3 2	4 5
4 in. "	4 3	3 6	5 0

L.C.C. COATED DRAIN PIPES.—London Prices, ex Stock,

	Pipe. s. d.	Bends, stock angle, stock angles. s. d.	Branches. s. d.
3 in. per yd. in 9 ft. lengths cwt.qr.lbs.	4 6	5 6	8 9
4 in. " 1 1 20	6 5	6 3	11 0
5 in. " 1 2 22	8 0	11 3	17 0
6 in. " 2 0 6	9 6	13 0	21 3

Gaskin for jointing 40/- per cwt.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information. Prices are subject to 2½ per cent. cash discount.

PRICES CURRENT OF MATERIALS—(contd.)

	Per ton. £ s. d.		London £ s. d.
IRON—			
Common Bars	12 15 0	..	13 15 0
Staffordshire Crown Bars—			
Good merchant quality	14 10 0	to	16 0 0
Staffordshire Marked Bars	18 0 0	..	19 0 0
Mild Steel Bars	12 18 0	..	13 18 0
Steel Bars, Ferro-Concrete quality, basic price	14 8 0	..	15 8 0
Hoop iron, basic prices	14 8 0	..	15 8 0
,, Galvanised	24 8 0	..	26 8 0
IRON—	Per ton in London.		
Soft Steel Sheets, Black—	£ s. d.		£ s. d.
Ordinary sizes, to 20 g.	16 5 0	..	17 5 0
,, ,, 24 g.	17 5 0	..	18 5 0
,, ,, 26 g.	18 5 0	..	19 5 0
Sheets, Flat, Best Soft Steel, C. R. and C.A. quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	17 10 0	..	18 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	19 10 0	..	20 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes 6 ft. to 9 ft. to 20 g.	18 5 0	..	20 5 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18 15 0	..	22 5 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	20 15 0	..	22 15 0
Sheets, Gavanised, Flat, Best quality—			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	19 5 0	..	22 5 0
Best Soft Steel Sheets, 22 g. and 24 g.	20 5 0	..	21 15 0
Best Soft Steel Sheets, 26 g.	21 15 0	..	22 15 0
Cut Nails, 3 in. to 6 in.	19 0 0	..	21 0 0
(Under 3 in. usual trade extras.)			

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

		s. d.
Seamless Copper tubes (basis)	per lb.	1 1
Strong sheet	,,	1 3
Thin	,,	1 4
Copper nails	,,	1 3
Copper wire	,,	1 3

PLUMBERS' BRASS WORK.

Delivered in London.
Stamped by Met. Water Board.

CRUTCH HEAD SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
29/-	45 – per doz.

CHROMIUM PLATED TOILET SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
40/-	59/- per doz.

SCREW DOWN STOP COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
31/-	44/6	75/-	175/-	250/-	396/-	per doz.

SCREW DOWN STOP COCKS WITH TWO UNIONS FOR LEAD.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
42/6	65/-	102/-	195/-	210/-	510/-	per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
7/6	9/-	14/-	24/-	37/6	54/-	per doz.

HEAVY CROYDON BALL VALVES.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	
33/6	55/6	85/-	165/-	237/-	per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.	
9/-	11/-	16/6	29/-	42/-	45/-	per doz.

BRASS FERRULES OF SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.	
9/6	11/6	20/6	26/-	37/-	per doz.

DRAWN LEAD TRAPS WITH BRASS CLEANING SCREWS.

	1¼ in.	1½ in.	2 in.	3 in.	
8 lb. Lead P...	17/6	23/-	32/6	66/6	per doz.
8 lb. Lead S...	21/6	27/6	39/6	73/-	per doz.

SOLDER.—Plumbers', 1/2, Tinmen's, 1/4, Blowpipe, 1/6 per lb.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil, in drums	per gallon	0 3 8
Boiled ,, ,, in drums	,,	0 4 0
Turpentine, in drums (10 gals.)	,,	0 7 6
Genuine Ground English White Lead, per ton		53 0 0
(In not less than 5-cwt. casks.)		
Extra for 1-cwt. kegs over 5-cwt. casks is 2/9 cwt.		
GENUINE WHITE LEAD PAINT.		
"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots	per ton delivered	72 0 0
Red Lead, Dry (packages extra)	per ton	45 0 0
Best Linseed Oil Putty	per cwt.	0 15 0
Size, XD quality	fkn.	0 3 6

Turpentine substitute can be obtained and prices vary according to the quality from 2/9 gallon upwards.

VARNISHES, &c.

		Per gallon.
Oak Varnish	Outside	0 14 0
Fine do.	,,	0 16 0
Fine Copal	,,	0 18 0
Pale Copal	,,	1 0 0
Pale Opal Carriage	,,	1 4 0
Best do.	,,	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	,,	0 18 0
Fine Copal Cabinet	,,	1 2 0
Fine Copal Flatting	,,	1 0 0
Hard Drying Oak	,,	0 18 0
Fine Hard Drying Oak	,,	0 19 6

		Per gallon.
Fine Copal Varnish	Inside	1 0 6
Pale do.	,,	1 12 0
Best do.	,,	1 2 6
Best Japan Gold Size		1 12 6
Best Black Japan		0 10 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 7 6
Berlin Black		0 14 0
Knotting (patent)		0 15 0
French and Brush Polish		0 12 0
Liquid Dryers in Terebene		0 9 0
Cuirass Black Enamel		0 7 0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

ORDINARY GLAZING QUALITY AND SELECTED GLAZING QUALITY.

per ft. super.		per ft. super.
18 oz. O.Q.	2½d.	32 oz. O.Q. 5½d.
18 ,, S.Q.	2⅝d.	32 ,, S.Q. 6½d.
24 ,, O.Q.	3¼d.	Obscured Sheet, 18 oz. 3d.
24 ,, S.Q.	3⅞d.	,, ,, 24 ,, 4½d.
26 ,, O.Q.	3⅝d.	Fluted 21 ,, 9d.
26 ,, S.Q.	4¼d.	Em'lld 18 oz., 5½d., 24oz.6⅝d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

	Per ft.
Rolled plate, ¼ in.	5½d.
Rough cast double rolled, ⅜ in.	6½d.
Rough cast double rolled, ½ in.	6½d.
Figured rolled, etc., white	6½d.
Figured rolled, etc., tinted	9½d.
Rolled Sheet	6d.
White rolled cathedral	6d.
Tinted rolled cathedral	8½d.

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ⅛ in. thick	0 10½
Wire Rolled, ¼ in. thick	0 9½
Wired Cast, ¼ in. thick	0 9½
"Calores" Sheet, 21 oz.	2 6
,, ,, 32 oz.	4 0
,, Cast, ¼ in. thick	0 10
,, ,, ⅜ in. thick	1 0
,, ,, ½ in. thick	1 2
"VITA" GLASS.	s. d.
Clearsheet—not exceeding 1 foot	1 0
,, 2 feet	1 3
,, over 2 feet	1 9
Polished plate not exceeding 1 foot	1 6
,, ,, 2 feet	3 0
Cathedral—not exceeding 1 foot	1 0
,, larger size	1 6
Horticultural Sheet and Cathedral "Vita" Glass Sizes up to 24 inches by 18 inches or not exceeding 3 feet	1 0
3/16 in. Wired Georgian Design. Sizes up to 96 inches long by up to 24 inches wide	2 6

LEAD, &c.

(Delivered in London.)	Per ton. £ s. d.
LEAD.—Sheet, English, 7 lb. and up	27 5 0
Pipe in coils	27 15 0
Soil pipe	32 5 0
Compo pipe	34 0 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills ..... per ton £17 0 0

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from April 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A¹	A²	A³	B	B¹
Craftsmen	1/8	1/7½	1/7	1/6½	1/6	1/5½
Labourers	1/3	1/2¾	1/2¼	1/2	1/1½	1/1¼

Aberdeen	A	Dumfriesshire	A³	Inverness	*	Perthshire	A³
Ayrshire	A	Dundee	A	Inverurie	A¹	Peterhead	A¹
Banff	B	Dunoon	A	Kincardineshire	A²	Renfrewshire	A
Berwickshire	A³	East Fife	A	Kinross-shire	A	Rothesay	A
Bridge of Allan	A	East Lothian	A	Lanarkshire	A	Roxburghshire	A³
Broughty Ferry	A	Edinburgh	A	Midlothian	A	St. Andrews	A
Clackmannanshire	A	Fifeshire	A	Monifieth	A	Selkirkshire	A³
Doune	A	Forfarshire	A³	Moray and Nairn	B	Stewartry	A³
Dunblane	A	Glasgow	A	Newport	A	Stirlingshire	A
Dumbartonshire	A	Greenock	A	Peeblesshire	A²	Stornoway	A³
Dumfries	A¹	Hamilton	A	Perth	A	Tayport	A
						West Lothian	A

*This town has its own rates: Masons, 1/6; Carpenters, 1/6; Slaters, 1/6; Plumbers, 1/6½; Plasterers, 1/7, but 1/8 is paid owing to the scarcity at present; Painters, 1/6 and Labourers, 1/1½.

The information given in this table is copyright. Rates of wages in England and Wales are given on page 631.

SLIDING DOOR GEAR

Phone: WATERLOO 4311 (3 lines) British Made. Phone: WATERLOO 4311 (3 lines)

MECHANICAL PERFECTION

COBURN SYSTEM

Latest Catalogue on Request.

THE BRITISH TROLLEY TRACK CO., LTD.
Orange Street, S.E.1.

Agents Everywhere.

THE SCOTTISH BUILDER

NEW BUILDINGS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Where business representatives cannot be seen personally at this stage, this should be mentioned. Items should reach 4, Catherine-street, Aldwych, W.C., not later than Wednesday morning.

BAILLIESTON.—INSTITUTION. — Towards the cost of new public health institution from plans by Mr. John Stewart, architect, Albert-street, Motherwell-Wishaw, estimated at £11,390, the Government is to give a 40 per cent. grant.

EDINBURGH. — SHOPS, ETC. — Messrs Stewart Kaye & Walls, 14, Hill-st., are the architects for the £20,000 building at Tollcross, for the Town and County Estates, Ltd., consisting of shops, showrooms and offices, etc.

GLASGOW.—CHURCH.—The congregation of the Episcopal Church of the Good Shepherd, Hillington, has decided to proceed with its plans for the erection of a church. Seating accommodation will be provided for 500 people.

GLASGOW.—MORTUARY.—The Corporation from plans by Mr. Thomas Somers, architect, Municipal-buildings, will erect, at the Southern General Hospital, a new mortuary block, also pathological department.

GLASGOW.—BUILDING.—Plans prepared for workshop and offices in Meiklewood-rd. Messrs. Francis J. C. Lilley, architects, Bellahouston-terr., Ibrox. Alterations and additions are to be carried out at The Wharf, Port Dundas, by the Clyde Bonding Co., Ltd., Cadogan-st., Blythswood, Glasgow, from plans by their own architects.

PERTHSHIRE. — SCHOOL. — The Scottish Special Housing Association, Ltd., Edinburgh, are to proceed immediately with a school and evacuation camp at Belmont Castle, Meigle.

STIRLING.—ADDITIONS.—The C.C. has decided to carry out reconstruction and additions to the police headquarters at £11,477.

STIRLING. — BUILDING. — The Dean of Guild Court has passed the following plans :— Stirlingshire and Clackmannanshire Joint Air Raid Precautions Authority, cleansing station at Goosecroft, Mr. David Marr, Burgh Engineer and Architect; William Muirhead, three shops and one four-apartment house at Drip-road.

NEW COMPANIES

THE particulars quoted below have been compiled by Messrs. Jordan and Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C.2, from the documents available at the Companies Registry.

EDMUND S. BAKER, LTD.—(357186). Registered October 14. The Lincoln Imp, Woodcock Hill, Felbridge, East Grinstead. Builders, decorators, builders' and timber merchants, etc. Nominal capital: £1,000.

FIRE ARMOUR, LTD.—(357074). Registered October 7. Builders and general contractors, etc. Nominal capital: £1,000. W. Brown, Garth, Holland Walk, Stanmore, Middlesex.

PRESSURE PAINTING CO., LTD.—(357175). Registered October 13. 31, Warwick-square, S.W.1. Painters, decorators, camouflage painters, etc. Nominal capital: £1,000.

LISLE MUNDAY AND CO., LTD.—(357170). Registered October 13. 164, Priory-road, St. Denys, Southampton. Paint, colour and varnish manufacturers. Nominal capital: £50,000.

A. DORMON, LTD.—(357123). Registered October 11. 91, Malden-road, Kentish Town, N.W.5. Builders, etc. Nominal capital: £1,000.

HARRY JOHNSON AND SON, BUILDERS, SMALL HEATH, LTD.—(357030). Registered October 5. 16, Golden Hillock-road, Small Heath, Birmingham. Builders, contractors, etc. Nominal capital: £2,500.

Resumption of R.S.I. Examinations.

The Royal Sanitary Institute and the Royal Sanitary Institute and Sanitary Inspectors Examination Joint Board announce the resumption of examinations on a restricted scale, particulars of which will be supplied on application to the Institute or the Board at their address at 90, Buckingham Palace-road, Westminster, London, S.W.1.

TRADE NEWS

Electric Heating Equipment for A.R.P.

Messrs. Belling and Co., Ltd., Enfield, Middlesex, have issued a special folder showing electric heating and cooking apparatus suitable for use in connection with air raid precautions. Among the appliances shown in the folder are some which can be used both for heating and for doing small cooking operations at the same time without using any more electricity. Many of these appliances have been supplied to local authorities for heating of control centres, wardens' and A.F.S. posts, etc.

An Industrial Space Heater.

The large-scale building construction—Government factories, workshops, halls, barracks, Militia and evacuation camps, etc. —that is going on at present has raised the problem of securing efficient heating that is also economical. The aim is, of course, to instal heaters which have a large heating capacity with a low fuel consumption, and at the same time fulfil all the conditions of the Factory Act.

Heating engineers and architects might well look into the qualities and merits of the "A.I." space heater, which is claimed to pass on in the form of heating no less than 88 per cent. of the heat released by the fire, and this without interfering with a relatively direct flow of gases. This heater—manufactured by the Allied Ironfounders, Ltd.—is designed to have a heating capacity of 100,000-120,000 B.T.U.s on a fuel capacity of 8-10 lb. per hour, a remarkable performance. It is manufactured in one size only, but in two finishes, fine cast and grey vitreous enamel. Full details are available from the company at Ketley, Wellington, Salop.

A New Reflector.

A new type of reflector known as the "Dimorbrite" has been introduced by Messrs. G. V. D. Illuminators, Ltd., to meet the war-time need for an economical fitting which will keep light off the walls and windows, and give effective, efficient and well-distributed illumination, while at the same time economising in current.

This reflector is an excellent A.R.P. fitting. Scientifically designed, it will take any size of lamp from 5 watts to 60 watts, each when inserted being automatically in focus without requiring any adjustment. The light is reflected downwards in a well-spread cone, the lamp being concealed from most viewpoints; no light can escape upwards or fall on windows, and there is no dazzling reflection from the lip. The reflector, it is claimed, is so efficient that a 60-watt lamp can be replaced by a 25-watt, or even by a 15-watt, without loss of effective illumination, and so on, thus enabling from 50 per cent. to 75 per cent. of the current bill to be saved. The fitting is available in colours suitable for home, office and factory, and sells at the moderate price of 5s.

A NEW REFLECTOR.

Protective Walling Units.

An illustration on this page shows a "stockade" enclosure for use in front of buildings requiring temporary protection. This construction is stated to be economical in cost; very easily erected; clean and tidy, saving the present objectionable litter caused by escaping sand and earth from bags; and far stronger. It can, of course, be taken down whenever required and the same units employed for permanent walling in basements and other places where shelters are required. Universal Concrete Construction, who have devised the system, state that it fully complies with the Home Office regulations for concrete walls, and has the additional advantage that the high-grade tile facings used have a tested standard strength ranging from 3,000 to 5,000 lbs. per sq. ft. Their extremely hard surfaces give considerable additional splinter protection.

If the units are employed for temporary sand enclosures they are, of course, filled with either sand or earth, but if used for permanent walling concrete filling would be employed. Full details are available from the firm at 33, Victory House, Leicester-square, W.C.2.

A Black-out Shuttering Ventilator.

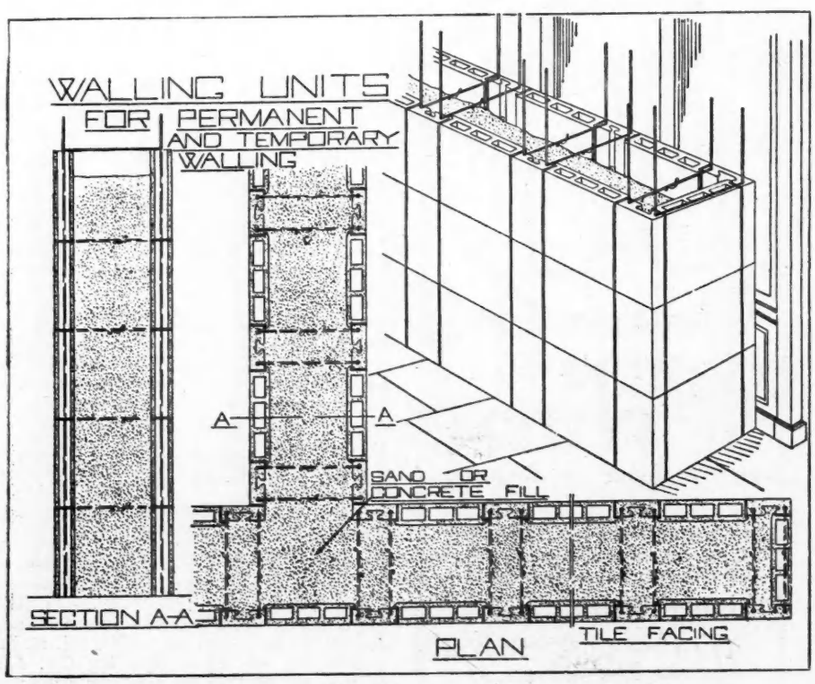
Fewer hours of daylight combined with the black-out regulations have served to emphasise to great numbers of people the importance of ventilation. Where paint is relied upon for black-out purposes, it is impossible to open windows for ventilation, and even shuttering is inclined to produce an unhealthy atmosphere where there is no form of air-conditioning.

A special form of black-out ventilator for use with interior or exterior shuttering has been put on the market by a firm of A.R.P. specialists. Called the "Peri-vent," it is a strongly made wooden box with an ingenious arrangement of baffles which permit air to pass through it but entirely prevent light from escaping.

Trade inquiries for the "Peri-vent" shuttering ventilator should be addressed to Messrs. Holroyd and Godbold, A.R.P. Specialists, 1, Clement's Inn, Strand, W.C.2.

Educational Building Work, Scotland.

Work on a number of uncompleted schools in Scotland which had been suspended because of a shortage of building materials, particularly timber, will shortly be started again, states a Scottish correspondent. A stock of timber has been allocated by the controlling authorities to the Scottish Education Department to meet a proportion of the needs of the education services during the three months ending December 31, 1939. The department has requested education authorities throughout Scotland to inform them of the supplies of timber required for the completion of work in hand.



REINFORCED CONCRETE "STOCKADE" WALLING. (See this page.)

TENDERS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

Tenders for A.R.P. work will be found under "A.R.P. Schemes."

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Acton.—Installation of new heating system at old Town Hall, for T.C. :—*W. Richardson and Co., Ltd., £1,285.

Bolton.—Additions to works, for St. Paul's Worsted Mills (Bolton), Ltd., Caroline-st. Bradshaw Gass and Hope, architects, 19, Silverwell-st. :—*J. Dickinson and Co., Ltd., Fairclough-st., Bolton.

Bridgnorth.—Reinforced concrete elevated reservoir, pumping station, laying of approx. 2 miles of spun iron and galvanised steel water mains at Stottesdon, for R.D.C. A. H. S. Waters, E., 25, Temple-row, Birmingham, 2. —*More Quarries, Ltd., Linley, Bishops Castle, £3,289.

Broomlee (Peebles).—Electric lighting and wiring, Broomlee Camp, for Scottish Special Housing Association, Ltd. Secretary, 11, Drumsheugh-gdns., Edinburgh, 3 :—*F. H. Wheeler and Co., Ltd., Century House, St. Peter's-sq., Manchester, 2, £227.

Carstairs.—Bridge scheme at Strawbridge Junction, L.M.S. Railway. W. Chapman, architect and engineer, Beckford-st. County-chambers., Hamilton :—Excavation, brick and mason, *Murdoch MacKenzie, Ltd., Motherwell-Wishaw, £3,496 12s. 8d.; steel construction, *Steel Construction Co., Ltd., Motherwell-Wishaw, £917 7s. 2d.

Chester.—Screens to open corridors at Lache council school, for T.C. :—*W. G. Kaleyards, Ltd., Chester, £410 4s. 3d.

Colchester.—Extensions to printing works, for Spottiswoode and Co., Ltd., Hythe. Quantities by Robert E. Crossland, 9, King's Bench-walk, E.C.2 :—*H. Everett and Son, 70, Barrack-st., Colchester.

Daventry.—Heating and hot water services in connection with extensions to hospital block at Public Assistance institution, for Northants C.C. :—*S. G. Gibson, Ltd., Church-walk, Rugby, £850.

Downpatrick.—Laying sewer in Mill-st., Killough, for R.D.C. R. J. Carr, clerk. J. S. Muree, architect, Belfast :—*Jas. Fee, Ringawoody, Ardglass, £246 6s.

East Ham.—Works for C.B. :—Central heating apparatus at Napier school—*Z. D. Berry and Co., Ltd.; greenhouse in Central Park—*Boulton and Paul, Ltd.

Ennerdale.—(a) Laying of approx. 16 miles of main for supply of gas at Cleator Moor, Frizington and Egremont, and (b) supply of pipes, for R.D.C.—(a) *Border Engineering Co., Ltd., Milbourne-st., Carlisle, £4,036; (b) *Stanton Ironworks Co., Ltd., Stanton-by-Dale, Nottingham, £10,506.

Erith.—Works for T.C. :—Transformer chambers—*B. Holroyd and Sons, Ltd., Dartford: (1) Matfield-rd., £333 18s. 10d., (2) Swanton-rd., £265 10s. 6d., (3) Church Manorway, £506 17s.; overground shelter at Belvedere Station—*— Bennett, £372.

Finsbury.—Works for B.C. :—Cleaning and redecoration of mess-rooms, boiler-house and establishments laundry at Merlin-st. baths —*Direct labour; heating installation at first-aid post at Risinghill-st. L.C.C. school—*Z. D. Berry and Co., £181.

Gateshead.—Extensions to factory at Kingsway on Team Valley estate, for Hugh Wood and Co., Ltd. L. J. Couves and Partners, architects, Carliol House, Newcastle-on-Tyne :—*Stephen Easten, Ltd., Westgate-rd., Newcastle-on-Tyne.

Glasgow. — Lighting control station in Helen-st., Govan. T. Somers, architect, George-sq. :—Excavation, brick and building, *Hugh Bradley, Ltd., £12,767; steel construction, Clyde Constructional Iron Co., Ltd., £1,911; joinery, carpentry and ironmongery, *J. Allan, £2,731; glazing, *Thomas Galt and Co., £202; roof tiling, *A. C. Whyte and Co., Ltd., Pollokshaws, £572; plumbing and sanitary engineering, etc., *J. Paterson (Plumbers) and Co., Ltd., £931; plaster, lathing, *R. Rogerson and Co., Ltd., Scotstoun, £644; tiling, terrazzo, etc., *Kean and Wardrop, £395; heating engineering and installation, etc., *C. F. Howden and Co., Ltd., £897. (Rest of Glasgow.)

Glasgow.—For Gorbals waterworks scheme. J. Cochrane, Engineer and Manager :—Excavation, brick and mason, Corporation Direct Labour Dept., £700.

Gravesend.—Licensed premises to be known as "Admiral Beatty" public-house at south-eastern corner of Hillside-av., for Charrington and Co., Ltd., brewers, Wellington Brewery. G. E. Clay, A.R.I.B.A., architect, 198, Parrock-st. :—*Norman West, Commercial-rd., Strood, £10,000.

Great Britain.—Works for Miners' Welfare Central Fund Committee. Plans prepared in Architects' Department, Romney House, Tufton-st., S.W.1. Pithead baths at Thorncliffe (Barley Hall), Ecclesfields :—*M. J. Gleeson, Ltd., Chesterfield-rd., Woodseats, Sheffield, 8, £12,491; pithead baths at Ouston "E" Colliery, Birtley :—*Wright and Kellett, Ltd., Finchdale-ter., Chester-le-Street, £15,353; pithead baths at Granville, Alfreton :—*G. Hodges and Son, Ltd., Horninglow-st., Burton-on-Trent, £13,685; pithead baths at Williamthorpe, Holmwood :—*Thos. Beighton, Ltd., Brimington, Chesterfield, £16,270.

Kilkenny.—For Graiguenamanagh waterworks extension, for County Board of Health and Public Assistance. Mr. T. Kelly, B.E., B.Sc., A.M.I.C.E.I., Engineer's Office, Central Hospital, Kilkenny :—*William Leahy, The Mall, Thurles, Co. Tipperary, £7,674 15s. 3d.

Leeds.—Electrical fittings and lamps, for Cross Gates library, for T.C. :—*R. O. Jones, 29, Hessle-view, Headingley, Leeds, £288.

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Leicester. — (a) New infants' school, Checketts-rd. E. J. Williams, architect, 13, New-st. (b) Reconstruction of Charnwood-st. council school. A. Henry Hind, architect, Grey Friars, for E.C. :—(a) *Coltmans (Builders), Ltd., 56, Sanveygate, Leicester, £22,744; (b) *T. W. Bilson, 75, Cobden-st., Leicester, £24,779.

Liskeard.—Boundary wall and fence around site of refuse dump at Landgreek-ln., Polperro, for R.D.C. G. Rogers, M.R.S.I., S., Greenbank-rd. :—*E. Pearce, 2, Hillside, Shutta-rd., East Looe, £64 10s.

Liverpool.—Installation of a hot and cold water and heating system at air raid precautions depot at filter beds, Horwich—*F. H. Sherbourne, Horwich, £174; repair of brickwork inside furnace No. 2 at Crematorium—*John Askan, Avenue-rd. wks., Aston, Birmingham, £149 10s.

Loch Katrine.—New sluices, etc., at Perthshire waterworks, for Glasgow Corporation. J. Cochrane, Water Engineer and Manager, Municipal-buildings :—Various buildings, etc., Corporation Statute Labour Department, Loch Katrine, £2,300.

¶London (Air Ministry).—Contracts placed for the week ended Oct. 21 :—Various buildings and external services—C. Miskin and Sons, Ltd., St. Albans, and F. R. Hipperson and Sons, Ltd., London; artificers' works—Walter Llewellyn and Sons, Ltd., Eastbourne.

Manchester.—Extension to Barton works, Upper Brook-st., Chorlton-upon-Medlock, for Rennie Tool Co., Ltd., Barton Works :—*T. Partridge and Co., Ltd., Lombard House, Great Charles-st., Birmingham, 3.

Manchester.—Additions to St. Joseph's hospital, Russell-rd., Carlton-rd. and Whalley-rd., Whalley Range, for Sisters of St. Joseph's :—*P. Conlon, 84, Seymour-gr., Whalley Range, Manchester.

Manchester.—Glazed brick faience wall linings at College of Technology extensions, for E.C. Bradshaw Gass and Hope, architects, 19, Silverwell-st., Bolton :—*Leeds Fireclay Co., Ltd., 4, St. Ann's-sq., Manchester.

Manchester.—Additions to factory, Vesta-st., Mill-st., Ancoats, for C. Whatmough, Ltd. J. P. Parrish, architect, 30, Broad-rd., Sale :—*D. Walton and Co., Ltd., Clarendon-rd., Pendleton, Manchester, 5.

Menston-in-Wharfdale. — Internal painting and decoration at isolation hospital, for Union Joint Isolation hospital :—*W. B. Dale and Son, Station-rd., Burly-in-Wharfdale, near Leeds.

Morecambe and Heysham.—Electricity substation in Woodhill-ln., for T.C. :—*Fisher and Webster.

Newcastle-on-Tyne.—(a) Electric light installation at the Waterworks-rd. junior school, and (b) heating and hot water installation at same school, for City Council :—(a) *R. W. Leek and Co., Newcastle, £226 7s.; (b) *G. N. Haden and Son, Ltd., Newcastle, £902 10s.

Newcastle-on-Tyne.—Customs office near the Ouseburn, for City Council. R. G. Roberts, City Architect :—*F. P. Dodsworth, Hill Heads, Whitley Bay. (Cost £450.)

Newcastle - under - Lyme. — Erection of "Marsh Arms" hotel, High-st., May Bank, for Parkers' Burslem Brewery, Ltd., the Brewery, Burslem, Stoke-on-Trent. R. Scrivener and Sons, architects, Howard-pl., Handley :—*Naylor and Nutt, Coronation-st., Tunstall, Stoke-on-Trent.

Ormskirk.—Extensions to women's ward, etc., at Ormskirk General hospital and dispensary, Hants-ln., for Board of Management. F. W. Nicholson, F.R.I.B.A., architect, 2, Dewey-av., Aintree, Liverpool :—*H. Taylor, 32, Burscough-st., Ormskirk.

Penzance.—Construction of high-class filtration works, including filter house, treatment tanks, intake on river, etc., at Lower Drift, for T.C. H. Lapworth and Partners, engineers, 25, Victoria-st., Westminster, S.W.1. J. H. Blight, M.I.M. & Cy.E., Borough Surveyor :—*E. Thomas and Sons, Kings-av., Falmouth, £9,372 18s. 2d.

Peterborough.—Boiler house to hospital, Midland-rd., for Governors of Peterborough and District Memorial Hospital. Allan W. Ruddle, F.R.I.B.A., architect, Long Causeway-chambers :—*Jellings' Builders, Walpole-st., Westwood Bridge, Peterborough.

Rowley Regis.—Alterations and additions to offices, Elbow-st., Old Hill, for T. B. Wellings and Co., Ltd., Elbow Works, Old Hill, near Dudley. J. C. T. Cole, architect, Central-bldgs., Long-ln., Blackheath, Birmingham :—*A. H. Farmer, 27, Attwood-st., Halesowen.

Rowley Regis.—Steel-framed building, Newtown-st., Cradley Heath, for B. Birks and Co., Albert-st., Cradley Heath :—*Westwood Dawes and Co., Ltd., Bowling Green-rd., Stourbridge.

Ruislip.—Auxiliary fire equipment store at Council's depot, Pinner-rd., Northwood, for U.D.C.—*William Spencer, Ltd., £281 5s.

Rushden.—Redecoration of Council houses, for U.D.C. J. W. Lloyd, S. :—*A. T. Nicholls, £960; *H. Freeman, £116.

South Shields. — Mortuary :—*Gustavus Bailey, Ltd., 19, King-st., South Shields.

Southampton.—Works for C.B. :—

Works at Sholing boys' school.

Heating and hot-water services :—

Dicks, Ltd., Winchester	£1,179 11 0
G. N. Haden and Sons, Ltd., Bournemouth	989 12 6
W. Richardson and Co., Ltd., London	976 0 0
Freeman Heating Co., Ltd., Southampton	919 10 0
*Young, Austin and Young, Ltd., Southampton	856 15 0

Alterations to school :—

J. E. Mitchell	£1,240 12 0
A. E. Jukes and Son, Ltd.	1,197 0 0
Brazier and Son, Ltd.	£1,195 0 0
Jenkins and Sons, Ltd.	1,188 0 0
*J. Bates and Sons	1,126 16 0

Fencing at Remand Home.

O. T. Roberts	£336 9 11
J. Bates and Sons	258 16 0
F. Houghton, Ltd.	248 16 6
*W. J. Bailey	216 15 0

Stockport.—Factory, Bird Hall-ln., Cheadle Hulme—*P. Hamer, Ltd., 15, Park-st., Swinton, Manchester.

Stockport.—Works at Houldsworth-sq., Reddish, for Crossley Bros., Ltd., Openshaw, Manchester—*D. Macdonald, Ltd., Stretford-rd., Trafford Bar, Manchester.

Sunderland.—Fire station at Fulwell, for T.C. J. E. Lewis, B.E. :—*Bell Brothers, Sunderland, £10,850.

Walthamstow.—Erection of Sutherland-rd. sub-station, for T.C. :—‡Building Works Dept., £796 13s. 2d.

Warrington.—Timber storage building, Tillgray Works, Scotland-rd., for Tilling, Gray & Co., Ltd. Wright & Hamlyn, architects, 20, Winmarleigh-st.—*C. Glover, 123, Oxford-ln., Warrington, £750.

Wigton.—(a) Water supply, for the parishes of Caldbeck, Hesket-New-Market and Haltcliffe; (b) sewerage scheme, for Caldbeck and Hesket-New-Market; and (c) water extension from Greenhill to Bolton-Low-Houses, for R.D.C. :—(a) M. Thompson, Ltd., Carlisle; (b) Cleghorn, Ltd., Carlisle; (c) R. Stoddart, Wigton.

Worcestershire.—Works, for the C.C. A. V. Rowe, County Architect, 38, Foregate-st., Worcester. Demolition and re-erection of chimney and repairs to Bromsgrove School of Art and repairs to schools at Stourbridge-rd., Bromsgrove and Rushwood—*W. Weaver, Ltd., Strand, Bromsgrove, £632 6s. 9d. Repairs to schools at Whythall-st. and Wattclose, Bromsgrove — *J. and M. Millward, Ltd., Alcester-st., Redditch, £361. Installation of low-pressure hot-water heating apparatus and domestic hot-water supply at new junior and infants' council school, Hagley—*Jones & Attwood, Ltd., Stourbridge, £491. (a) Supply of fencing to Grange-ln. boundary of Grange County Senior school, and (b) preparation of playing fields and construction of tarmac footpaths, Stourbridge—(a) —*Hill & Smith, Ltd., Brierley Hill, £201 15s.; (b) J. Hadfield & Son, Ltd., 36, Cannon-st., Birmingham, 2, £630.

An Appeal.

For evacuated cripple children, the St. James' Cripple Mission are desperately needing warm clothing, shoes, folding invalid chairs and knitting wool, etc. Magazines, toys and games would also be appreciated. Any such gifts or contributions would very gratefully be received by Mr. Frank Blundell, 58, Murillo-road, Lewisham, S.E.13.

Electrical Contracting : Wages Agreement.

On the question of making some cost of living (war) adjustment to the existing wages agreement the Electrical Trades Union and the National Federated Electrical Association have agreed as follows :—

(1) That pending further consideration of the problem there shall be no disturbance of the existing National Standardised Wages Agreement; (2) That an additional payment of 3s. 6d. per week shall be made commencing on the second pay day in November for the pay period covered by that pay day; (3) Such payment is intended to be a cost of living (war) addition, and shall apply to all journeymen electricians and assistants over 21 years of age irrespective of the hours worked, provided that—(a) The full additional payment of 3s. 6d. per week shall be made when the period of employment is not less than three days in any one week. (b) For periods of less than three days in any one week payment shall be made at the rate of 7d. (sevenpence) per day.

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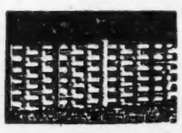
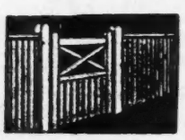

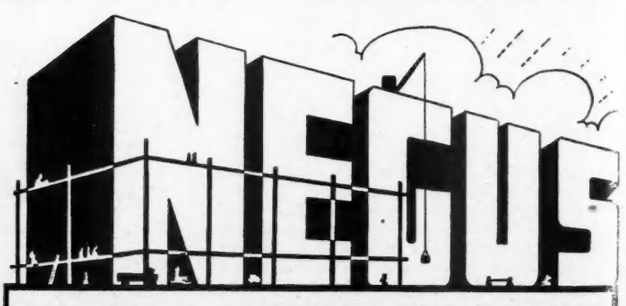

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